

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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EDITORIAL COMMENT.

A Year of War and Aircraft.

Since the declaration of war by Great Britain, just one year ago on Wednesday, a great number of lessons, drastic and dramatic, homely and epoch-making, have been forced upon us and the rest of the world. In all directions preconceived ideas of what would be the exact lines for the war to follow have had, one after another, to be abandoned, and other ideas to be evolved in their place, and elaborated to such degree of perfection that, where they have been brought into being through some action of our enemies, our counterblast might be so effectual as to nullify any advantage which might at first have been gained by our opponents. We may, we think, safely claim, with little fear of contradiction, that the most outstanding revolution in this respect is to the credit of the introduction of aircraft into the services of the commands of both sides. Previous to the actual outbreak of hostilities without doubt the value placed upon aircraft by a small section of those entrusted with seeing to the safety of the British Empire was high. That it should have attained to the height of importance to which the first year of the war has raised it, as an indispensable factor in successful tactics, is a result which

perhaps the most enthusiastic amongst its supporters could hardly have dared to hope. But there can now be no question that aviation has already so impressed its qualities in relation to reconnaissance and in its powers for effectually raiding the enemy behind his own lines, as to be absolutely indispensable to any forces in active operation. And this position is daily becoming more positive and pronounced, until it is clear that, with the entry of the great world's struggle upon its second year, there is every prospect that aircraft will be called upon for even more vital and widespread functions than anything that has so far been effected through its agency. Whilst aeroplanes have progressed in their effective aggressiveness, the same can scarcely be claimed for the unwieldy Zeppelins. That the latter have been able to accomplish a certain amount of mischief cannot be denied. But when analysed in the light of war operations as a whole, these overboomed airships must be written down absolute failures so far as any military value is concerned. Relatively our own lighter-than-air craft have more justified their existence, and we have every confidence that this relative position in the future will be more and more marked in our favour. After twelve months of war, in our opinion the monster dirigibles of the Germans have demonstrated beyond doubt that the views expressed for some years past in *Flight* in regard to these cumbrous craft have been the correct ones. They are of no fighting value day or night, and it is only in the hours between sunset and sunrise that they are of any account at all, and then only as marauders in the same sense that the murderer seeks his victims in the still hours of the night. As armed scouting units, whether it be as adjuncts to the Navy or Army, airships have distinct and valuable functions within their range, and it is in this direction that the future development will, we think, be still further extended. It is, however, not only unnecessary but inexpedient for this purpose that they should be of the mammoth breed. A more reasonable and mobile size has so many advantages that it seems almost incredible that the Germans should still insist upon increasing their size rather than profit by the lessons already set them through the prowess of our flying services. But then, apparently, the main object of the airfleet high command is to make murderous raids upon unprotected localities, rather than employ these weapons in more legitimate war operations, and perhaps from this cultured point of view they may be right in their adherence to

the principles which so far have governed the building of their Zeppelins. There is one consolation along these lines. In their necessity for getting clear of our aviators, after the drastic experiences which have been meted out to them recently, the weight of bombs which they carry must be appreciably reduced, as lately the constructors have directed their best endeavours to obtain greater speed and higher climbing powers at the sacrifice, in all probability, of their explosive carrying capacity.

When we look back upon the work of our aeroplanes, what a different record is there to reckon with. It may be said that the opening act of the war was the flying of an aeroplane over French soil, and each month, as hostilities have grown in their magnitude, has seen the work of the British flying services, and of our Allies, as the records in *Flight* will testify, more conspicuous in their invaluable work. At first as means of reconnaissance and as directors of artillery attack, the air services very quickly put themselves in the front rank with the General Staff. So steadily have the officers ever since demonstrated their powers for effective tactical raids, that the almost daily references to flights of aeroplanes destroying this or that important railway junction, or blowing up transport columns is allowed to pass with but scant notice. It is however very suggestive of the future operations of the Air Services when the numbers taking part in each successive raid are examined. Instead of the one or two members with half a dozen bombs of the early days, it is becoming a dozen, a score and in the latest attacks close upon half a hundred flying officers who take part in a smashing blow at some important military objective. And from the particulars allowed to transpire, the results have been a source for complete satisfaction from our side's point of view.

That the final effect of all these experiences can result in any other way than to establish the Air Services of the future of the nations of the world upon a permanent and all-important basis, is unthinkable. In the years to come, as a consequence, our children will see the gradual establishment of such enormous stations of aircraft, with all their attendant surroundings, that the present demands of flights for attack of one and two thousand aeroplanes at a time will no longer be a dream. The reality will be fully up to these figures, and to the next generations will be left the task of working out the many problems which may arise in utilising this new power of offence, which will by then have been brought to so high a level of efficiency as to, in many directions, revolutionise the tactics and strategy of modern warfare. Hideous as is this present warfare, at least aviation will have special cause to retain memory of it in time to come. Although it would have been a thousand times better that aviation should never have been, or even allowed to die out by the indifference of the present generation, rather than the present world-upheaval should have come into being, it must be confessed that the building up of the aeronautical industry has been thereby shortened by half a century, if not a century, which it would otherwise have had to go through. To this extent good indeed has come out of evil, and the pioneers of the movement

will necessarily, whilst lamenting the ghastly crimes through which the art has been indirectly evolved, have reason to be thankful for such an irresistible opportunity for the bringing to the apex of its glory the conquest of the air.

By way of pointing the moral of the progressive work of the Allies' flying officers, we have summarised below some of the chief attacks which they have made during the past year up to the end of July. The greater frequency and strenuousness of the raids during June and July are sufficiently suggestive. It should be remembered that in addition there are innumerable flights of military importance by British flying officers and others by our Allies' pilots of which, for certain political reasons, no record will be available until such time as it is deemed desirable to publish particulars:—

1914.

September 22nd.—Five R.N.A.S. pilots drop bombs on Zeppelin sheds at Düsseldorf and circle over Cologne, where, owing to mist, military objects could not be distinguished, so no bombs were dropped.

October 8th.—Three British officers (Spencer Grey, Marix and Sippe) drop bombs on Zeppelin shed at Düsseldorf.

November 21st.—Three British officers drop bombs on Zeppelin sheds at Friedrichshafen.

December 4th.—French pilots drop bombs on Freiburg-im-Breisgau.

December 9th.—French pilots drop bombs on Freiburg-im-Breisgau.

December 24th.—Seven British officers bomb Cuxhaven.

December 24th and 26th.—French pilots bomb Metz.

1915.

January 22nd.—Two British officers bomb Zeebrugge.

February 11th-12th.—Thirty-four British officers bomb Ostend, Blankenberghe, Middelkerke, and Zeebrugge.

February 16th.—Thirty-two British officers bomb Ostend, Middelkerke, and Zeebrugge, while eight French pilots attack Ghistelles Aerodrome.

March 9th.—Six British officers bomb Ostend.

March 24th.—Five British officers bomb submarines under construction at Hoboken, near Antwerp.

March 26th.—Ten French pilots bomb Frescaty and Metz.

April 16th.—Three British officers bomb El Sîr (Suez Canal).

May 27th.—Eighteen French pilots bomb Ludwigshafen.

June 3rd.—Twenty-nine French pilots bomb Crown Prince's Headquarters.

June 7th.—Lieut. Warneford brings down Zeppelin between Ghent and Brussels, while Lieuts. Wilson and Mills attack Zeppelin sheds at Evere.

June 15th.—Twenty-three French pilots bomb Karlsruhe.

July 16th.—Ten French pilots bomb Chauny.

July 20th.—Six French pilots bomb Colmar. Thirty-one French pilots bomb Conflans Junction.

July 21st.—Two French pilots bomb Colmar Station. French pilots bomb Autry Station.

July 22nd.—French Squadron bomb Conflans Junction.

July 26th.—French Squadron bomb Nantillois Station.

July 29th.—French pilots bomb the Ypres-Roulers Railway at Passchendaele; the German bivouacs in the district of Longueval, to the west of Combes; the German defence works on the Brimont Hill, near Rheims; the military station of Chatel in the Argonne; the station of Burthecourt in Lorraine; a factory engaged in the production of asphyxiating gases at Dornach, Alsace.

July 30th.—A French squadron bomb Freiburg station. Ten French machines bomb Chauny station. Forty-five French machines bomb the petrol-producing factories of Pechelbronn, between Hagenau and Wissemburg (north of Strassburg). The factories of Pechelbronn and their annexes (103 shells), the station of Detwiller near Phalsbourg (Lorraine) and the aviation sheds of Phalsbourg.



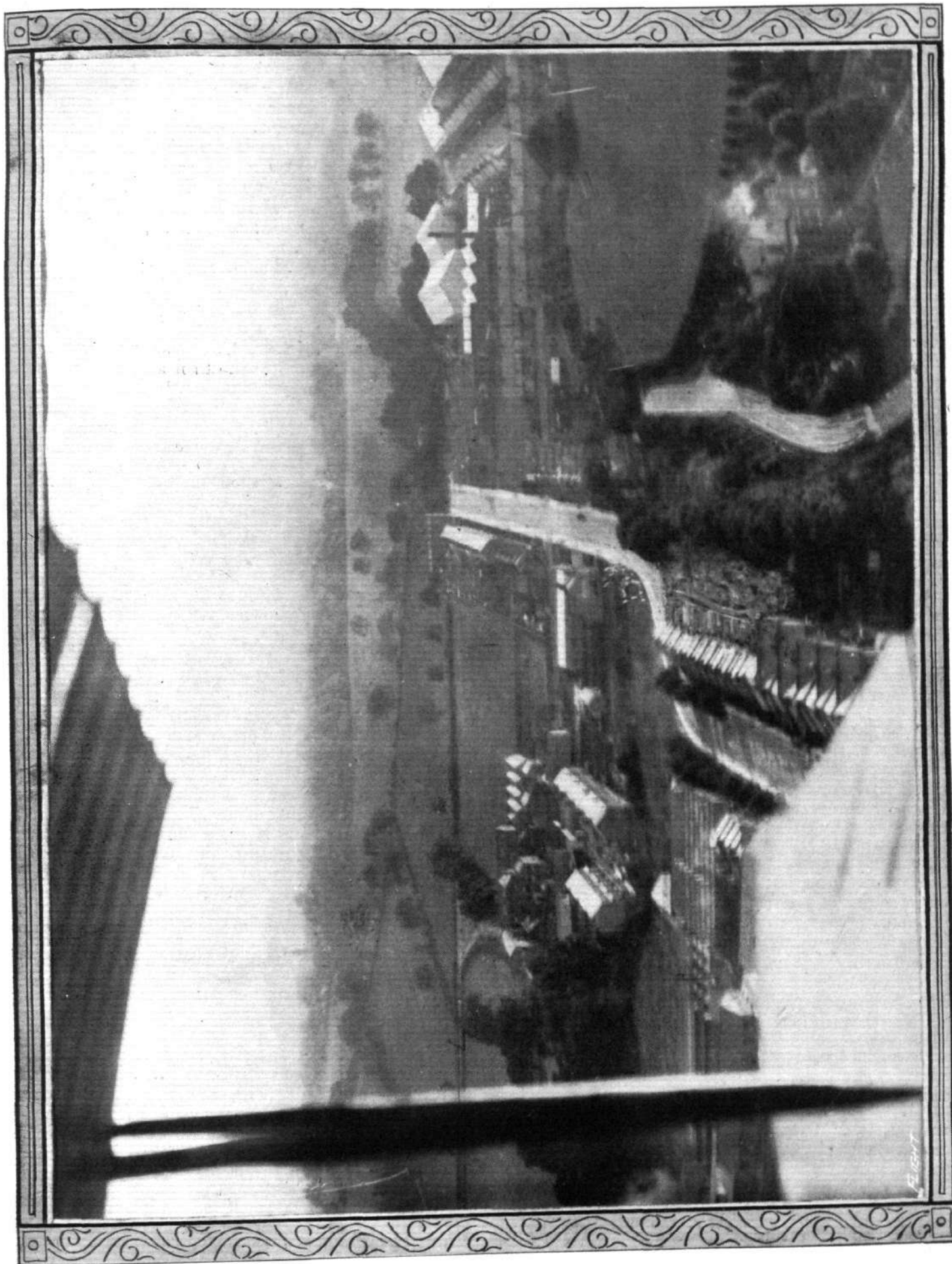
British Flying Officers in Germany.

FROM a report on German prison camps, forwarded to the Foreign Office by the American Ambassador, it appears that Lieut. Montague Chidson and Lieut. Oswald Mansell-Moullin, of the Royal Flying Corps, are at Friedburg.



Badges for War Workers.

IN last Friday's LONDON GAZETTE it was announced that after a period of at least 40 days the Minister of Munitions proposes to issue rules as to the War Service Badges in England and Ireland. Copies of the rules can be obtained from the Ministry of Munitions.



ABOVE HENDON AERODROME.—A snap from the Ruffy-Baumann biplane at 500 ft. above the lying ground. The road seen prominently in the photograph is part of Collindale Avenue.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

In the despatch dated July 29th from Sir John French there was the following:—

"On the 25th, one of our aeroplanes shot down a German machine, which fell in our lines east of Zillebeke."

In the French *communiqué* issued on Wednesday afternoon, July 28th, there was the following:—

"At the Dardanelles there is nothing to report with the exception of slight progress by our troops on our right wing and the activity of our aviators, who successfully bombarded the new aviation camp of the enemy, north of Chanak. They hit the sheds and also a petrol store, thereby causing a considerable fire."

The following correction to German *communiqués* was issued in Paris on the 28th ult.:—

"The French aeroplanes reported as destroyed descended in our lines without mishap. The bombs launched on Dunkirk have done no damage. We maintain a marked superiority."

The afternoon *communiqué* issued in Paris on July 30th contained the following:—

"A German aeroplane dropped four bombs on Nancy. Nobody was injured and no damage was done."

In the evening *communiqué* it was stated:—

"Our aeroplanes yesterday bombarded (1) the Ypres-Roulers railway at Passchendaele, (2) the German bivouacs in the district of Longueval to the west of Combles, (3) the German defence works on the Brimont Hill near Rheims, (4) the military station of Chatel in the Argonne, (5) the station of Burthecourt in Lorraine."

"One of our aeroplanes last night bombarded a factory engaged in the production of asphyxiating gases at Dornach, Alsace."

"An air squadron to-day bombarded the station of Freiburg, and another squadron of ten aeroplanes from the entrenched camp of Paris dropped forty shells on the station of Chauny."

"A squadron of 45 aeroplanes left this morning, having as its objective the petrol-producing factories of Pechelbronn, between Hagenau and Wissemburg. Owing to a cloudy sky and frequent fogs only a portion of the squadron was able to reach the goal. The factories of Pechelbronn and their annexes received one hundred and three shells. Six shells were also dropped on the station of Detwiller, near Phalsbourg, and six on the aviation sheds of Phalsbourg. All the aeroplanes returned to their points of departure."

In Saturday afternoon's *communiqué* there was the following:—

"This morning German aviators bombarded St. Pol, on the coast, where no damage is reported, and Gravelines, where one child was killed."

"Some bombs were dropped by enemy aviators on Nancy. The material damage done was insignificant. One of the German aeroplanes was hit by our artillery fire and was compelled on its return to land between the French and German lines. The aviators succeeded in escaping but the machine was brought close to our trenches."

In the evening *communiqué* it was stated:—

"A few bombs were dropped by aviators on Dunkirk, causing insignificant damage."

"This morning seven of our aeroplanes bombarded the station and the Aviatik factories at Freiburg in

Breisgau. One of them was compelled to land on the return journey in the enemy lines in consequence of motor trouble."

In Sunday afternoon's *communiqué* it was stated:—

"Yesterday our aeroplanes dropped thirty bombs on the aviation camp of Dalheim, near Morhange, and six bombs on a military train near Château Salins."

In the evening *communiqué* there was the following:—

"German aeroplanes dropped on the plateau of Malzeville, near Nancy, about twenty bombs, which caused no casualties and did no damage."

The following note was semi-officially issued in Petrograd on July 30th:—

"Two Russian aviators, Lieutenant Pokrovsky and Cornet Plovsky, spotted an Austrian aeroplane flying a long way off towards 8 a.m. on July 28th. They immediately flew towards the Austrian, and, flying above him, opened fire on him with their rifles, forcing him lower and lower towards the ground. All attempts on the part of the enemy's machine to defend itself proved unavailing, and after a short fusillade the Austrian aviators came to earth."

"The Russian aeroplane landed by the side of the Austrian, and the two Russian officers instantly rushed at the Austrians with their rifles. The enemy's machine was carrying a lieutenant and a non-commissioned officer, and these surrendered on the spot. The captured machine was an absolutely new Aviatik, with an engine of 120 h.p."

In a *communiqué* from the General Staff of the Army in the Caucasus, issued in Petrograd on August 3rd, there was the following:—

"In the direction of Sarykamysch an aviator threw bombs on a large Turkish camp, creating great confusion."

In a *communiqué* issued in Petrograd on Tuesday there was the following:—

"Our seaplanes attacked a German gunboat near Windau, and forced it to run ashore."

"The same machines attacked and put to flight an enemy Zeppelin and two seaplanes, one of which was brought down."

An official despatch published in Italy on July 29th stated:—

"On the evening of July 23rd, three Italian aeroplanes bombarded the town of Innsbruck. Eight bombs were dropped, but did not cause any serious damage."

"Although exposed to a sharp fire, the aeroplanes were able to return to Italy."

The following semi-official statement was issued in Rome on July 29th:—

"Austrian methods of warfare may be judged from the following incident. Towards the end of the action on one of the days of battle along the Isonzo a column of our wounded was descending a hill-side in order to find accommodation in the motor-ambulances waiting for them, when an enemy aeroplane, dropping to about 300 mètres above the wounded, opened a vigorous fire upon them with its machine-gun. The Austrian aviators persisted in this 'chivalrous' attack for a long time, manoeuvring above our men and firing continuously. Fortunately the damage they did was very slight, but our

wounded and ambulance-men are indignant at the disloyal and inhuman conduct of the enemy. There can be no question of ignorance on the part of the airmen. At a height of three hundred metres the stretchers, bandages, and Red Cross emblems were clearly visible."

In the *communiqué* issued in Rome on Monday there was the following:—

THE BRITISH AIR SERVICES.

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Naval Air Service.

The following appeared among the Admiralty announcements of the 29th ult.:—

H. R. Simms entered as Flight Sub-Lieutenant, for temporary service, with seniority of July 28th, and appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 30th ult.:—

F. T. Ashford entered as temporary Lieutenant, R.N.V.R., and appointed to the "President II," additional, for R.N.A.S., for inspectional duties; to date July 29th. W. A. Scoble and F. R. B. Davis entered as temporary Lieutenants, R.N.V.R., and appointed to the "President II," additional, for R.N.A.S.; to date July 29th.

M. A. Sargent entered as temporary Sub-Lieutenant, R.N.V.R., and appointed to the "President II," additional, for R.N.A.S. To date July 29th.

Probationary Flight Sub-Lieut. W. D. Wain entered as Sub-Lieutenant, R.N.V.R., and appointed to the "President II," additional, for Armoured Cars. To date July 29th. Appointment as Probationary Flight Sub-Lieutenant terminated.

The following have been entered as Probationary Flight Sub-Lieutenants, for temporary service, and appointed to the "President," additional, to date as mentioned: E. B. Thompson, W. R. Dainty, G. L. Railton, G. G. Simpson, C. W. Scott; Aug. 8th. R. Spickernell; Aug. 9th. E. L. Ford; July 29th.

The following appeared among the Admiralty announcements of the 31st ult.:—

Late Second Lieut. C. L. E. Geach entered as Probationary Flight Sub-Lieutenant, for temporary service, and appointed to the "President," for R.N.A.S. To date July 28th.

The following appeared among the Admiralty announcements of the 3rd inst.:—

Temporary Sub-Lieut. (R.N.V.R.) F. W. Hodges promoted to temporary Lieutenant, with seniority of June 1st.

Leading Mechanic M. J. M. Bryan promoted to Probationary Flight Sub-Lieutenant, for temporary service, with seniority of Aug. 1st, and appointed to "President," additional, for R.N.A.S.

The following have been entered as Probationary Flight Sub-Lieutenants, for temporary service: E. W. C. Corry, with seniority of July 31st; W. S. Stewart, C. W. Greig, A. F. Marlowe, and A. A. Wallis, with seniority of Aug. 7th, and all appointed to "President," additional, for R.N.A.S.

Temporary commissions have been granted as follows:

Lieutenants (R.N.V.R.): H. S. Whitaker and A. Partridge, with seniority of Aug. 2nd, and both appointed to "President," additional, for R.N.A.S.

Sub-Lieutenants (R.N.V.R.): D. N. Gillmore, with seniority of Aug. 2nd, and appointed to "President," additional, for R.N.A.S.; S. T. Baker, H. A. Furniss, F. H. Tomms, L. G. Wright, and the Hon. Esme S. Erskine, with seniority of Aug. 2nd, and all appointed to "President," additional, for R.N.A.S. (Armoured Cars).

THE ROLL OF HONOUR.

The following casualties have been announced by the Secretary of the Admiralty:—

Under date July 29th:

Missing.

Flight Sub-Lieutenant William A. K. Dalzell, R.N.
Sub-Lieutenant C. H. Dolling-Smith, R.N.V.R.

"Our waterplanes on Saturday evening made another raid on Riva (at the head of Lake Garda), dropping bombs with excellent results. They were subjected to a sharp fire, but escaped. Next morning our heavy artillery bombarded with great effect the station of Rovereto, where our observers had reported the arrival of trains full of troops."

The following appeared among the Admiralty announcements of the 4th inst.:—

H. Harris, granted temporary commission as Lieutenant, R.N.V.R., and appointed to the "President," additional, for R.N.A.S. To date Aug. 3rd.

Royal Flying Corps (Military Wing).

The following appeared in a supplement to the LONDON GAZETTE issued on the 28th ult.:—

Flying Officers.—June 30th, 1915: Second Lieut. G. A. Turton, Alexandra, Princess of Wales's Own (Yorkshire Regt.), and to be seconded. Lieut. R. A. Saunders, 7th London Brigade, R.F.A., T.F. Lieut. A. Somervail, 4th (Border) Batt. (Territorial) King's Own Scottish Borderers; July 3rd, 1915. July 6th, 1915: Second Lieut. A. T. Whitelock, Special Reserve; Second Lieut. O. Greig, Special Reserve. July 17th, 1915: Second Lieut. A. C. Wright, Special Reserve; temporary Second Lieut. D. K. Johnstone.

Supplementary to Regular Corps.—Second Lieut. (on probation) Arthur C. Wright is confirmed in his rank. Frank Hudson to be Second Lieutenant (on probation). July 9th, 1915.

The following appeared in a supplement to the LONDON GAZETTE issued on the 29th ult.:—

Equipment Officer.—Lieut. T. V. Smith, Special Reserve, from an Assistant Equipment Officer, and to be temporary Captain whilst so employed. June 30th, 1915.

Assistant Equipment Officers.—Temporary Qrmr. and Hon. Lieut. S. C. Parr, Royal Flying Corps; March 5th, 1915. Second Lieut. E. I. Bingham, Special Reserve; July 12th, 1915. Lieut. R. K. Pillers, 3rd Batt. (Reserve) Northamptonshire Regt., and to be seconded; July 16th, 1915. Second Lieut. G. E. W. Humphrey, Special Reserve; July 16th, 1915.

The following appeared in the LONDON GAZETTE of the 3rd inst.:—

Flying Officers.—July 16th, 1915: Second Lieut. C. C. Miles, Special Reserve; Second Lieut. H. T. Kemp, Cheshire Regt., and to be seconded; Second Lieut. H. V. C. de Crespigny, Special Reserve; Second Lieut. G. S. M. Insall, Special Reserve.

Supplementary to Regular Units or Corps.—Justin H. Herring to be Second Lieutenant (on probation). June 7th, 1915.

Second Lieutenants (on probation) confirmed in their rank: Gilbert S. M. Insall, Hugh V. Champion de Crespigny, and Charles C. Miles.

To be Second Lieutenants (on probation): Harold W. Butterworth; July 10th, 1915. Hubert G. Salmond; July 13th, 1915. Maurice Le Blanc-Smith and Gilbert de L. Wooldridge; July 14th, 1915. Edward A. Kelly; July 17th, 1915.

The following appeared in the supplement to the LONDON GAZETTE issued on the 4th inst.:—

Warrant and non-commissioned officers to be Second Lieutenants for service in the field:

East Surrey.—Sergt. R. Collis, from Royal Flying Corps, and seconded for duty with that unit. June 29th.

Hants.—Sergt. W. V. Strugnell, from Royal Flying Corps, and seconded for duty with that unit. June 27th.

Flying Officers.—July 16th, 1915. Lieut. Richard T. Vachell, the Northumberland Fusiliers, and to be seconded; Sec. Lieut. W. J. McConnochie, Special Reserve; Temp. Lieut. H. A. Van Ryneveld, 7th (Service) Batt. Loyal North Lancashire Regt., and to be transferred to the General List. Sec. Lieut. J. L. Williams, Special Reserve. July 20th, 1915.

Supplementary to Regular Corps.—Sec. Lieut. (on probation) Herbert S. Ward is confirmed in his rank.

The following casualty in the Expeditionary Force has been officially reported from General Headquarters to the War Office:—

Under date July 28th:

Missing.

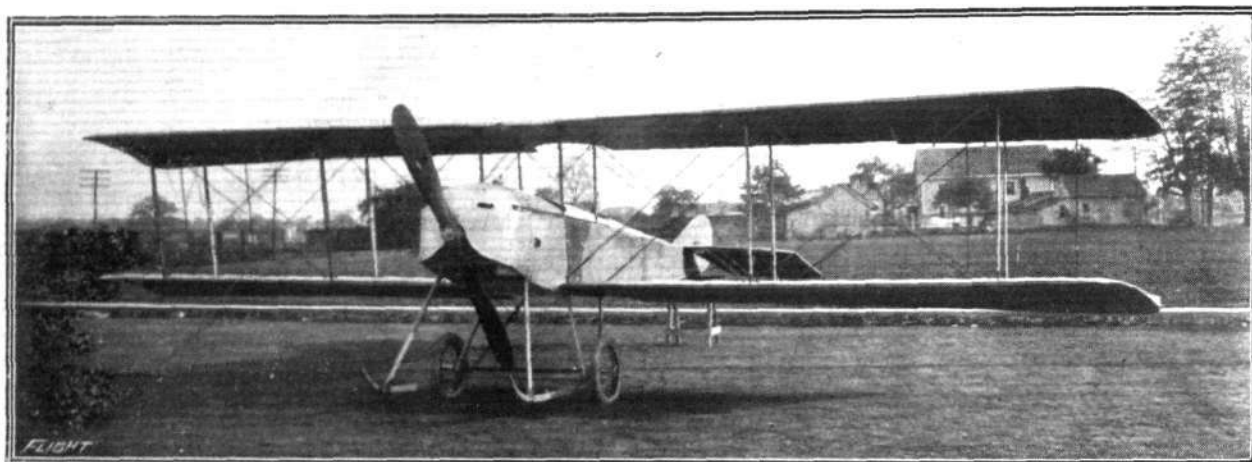
Lieutenant A. G. Weir, Royal Flying Corps.

THE "SIMPLEX" (MAYO) TRACTOR BIPLANE.

FURTHER particulars of the 90 h.p. Mayo type A reconnaissance tractor biplane which was described, with scale drawings and illustrations, in last week's *Flight* have since come to hand from America. It is stated that in view of the success of the first machines it has been decided to change the name to the "Simplex," and a

speed scout is a modification of a machine that was designed by Vought for the Aero Club of Illinois as an entry in the 1914 Gordon-Bennett race, unfortunately cancelled on account of the war.

Since its initial trial, on May 14th last, we understand that the model A tractor biplane has made nearly 200

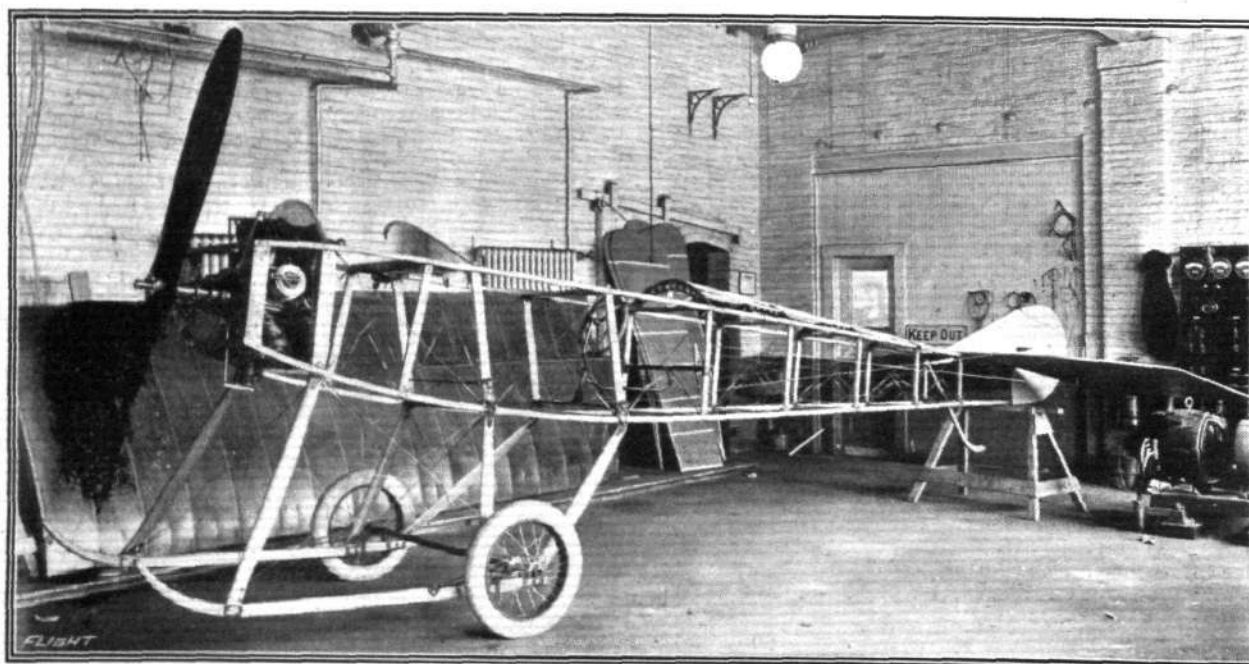


A view from the front of the 90 h.p. "Simplex" (Mayo), type A, reconnaissance tractor biplane.

separate company—the Simplex Aircraft Co.—has been organised for the purpose of building this and other types of aeroplanes and accessories on a large scale. Extensive works with an up-to-date equipment have been erected at a convenient site at New Haven, Conn., and one of the accompanying illustrations gives a fair idea of the extent of the new factory.

In addition to the type A military tractor biplane, two other types of military biplanes, both designed by Mr.

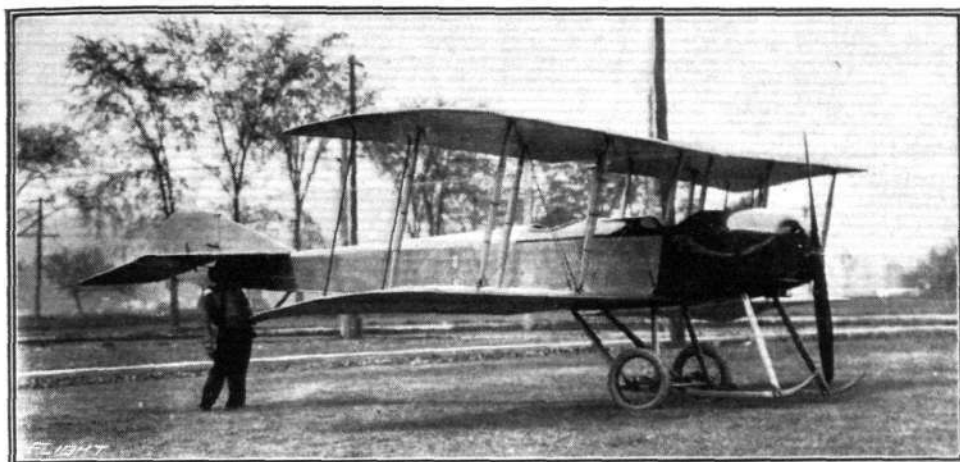
flights, many of which have been made with a view to bringing out any weak points in design, as well as to demonstrate its flying qualities before various officials. Apparently no serious defects or deficiencies were brought to light, for it was not found necessary to make any alterations to the designer's original blue-prints, and no changes are contemplated; nor had a single wire or part been broken or replaced. The only items that have received attention are the shock absorbers on the landing



The partly assembled fuselage of the 90 h.p. "Simplex" (Mayo) tractor biplane. This view gives a good idea as to the substantial construction.

Chance M. Vought, are being constructed. These are a single seater tractor scout, having a speed of 110 m.p.h., and a 175 h.p. gun-carrying pusher of somewhat large dimensions. It may be noted in passing that the high

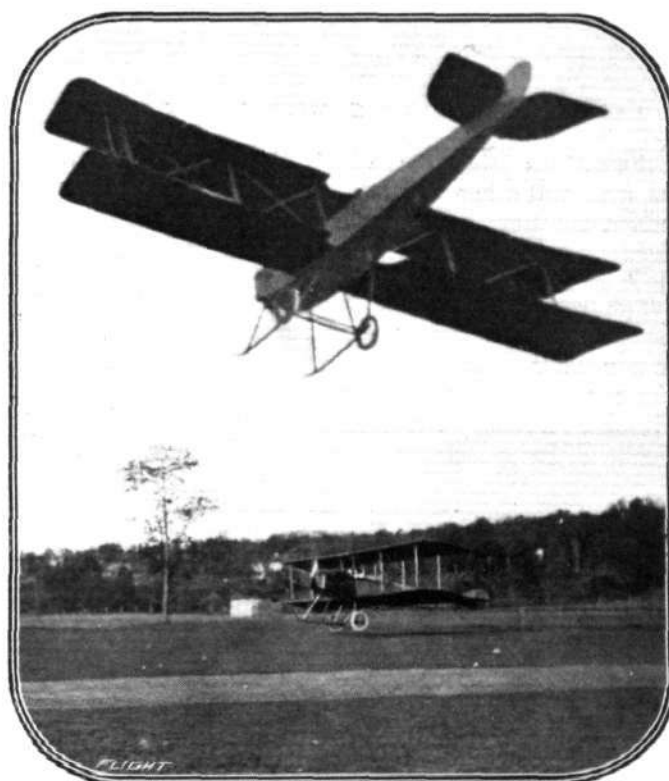
chassis, which have been fitted with additional strands of rubber, and the fuel tanks, which have been enlarged. The tests further demonstrated that the machine was up to its designer's expectations as regards speed



Another view of the 90 h.p. "Simplex" (Mayo) tractor biplane.

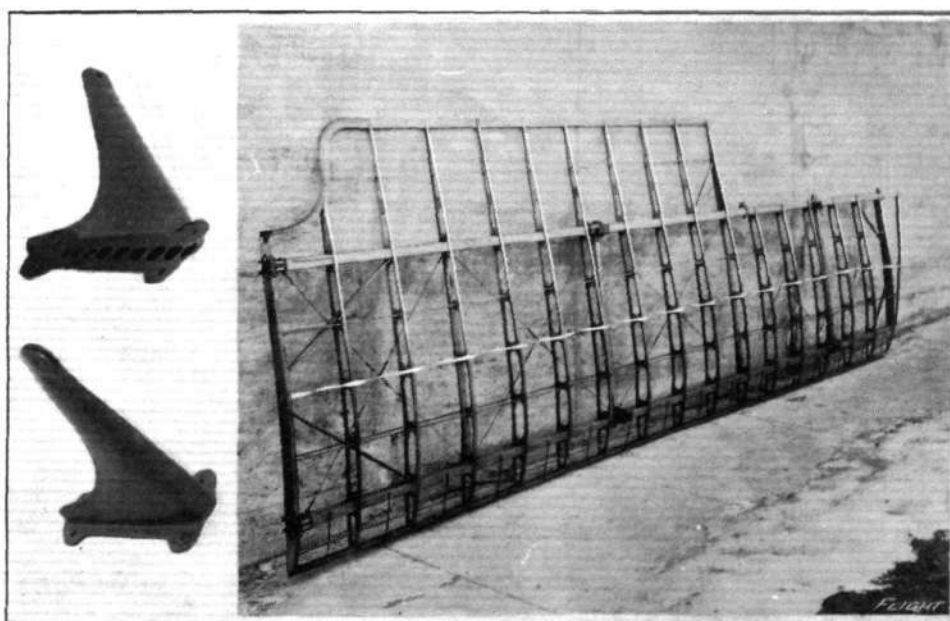
—the tests showed 3 m.p.h. more than was calculated—load carrying and climbing, with a fair margin to spare. We are informed that during the tests the machine made consistent speed averages of 83 m.p.h., and climbed 3,650 ft. in 7 mins., carrying a load of 645 lbs. including pilot and passenger. The minimum speed has not been absolutely determined owing to the unsuitable nature of the flying ground, but low speeds of 40 m.p.h. have been obtained. The best gliding speed of the machine, as measured by the air speed indicator, is 61 m.p.h., and the most efficient gliding angle is 1 in 7. As nearly as was determined, the best air speed for a full load climb was 65 m.p.h. These figures were obtained with the Ogilvie air speed indicator, working in conjunction with several other instruments of Mr. Vought's own design.

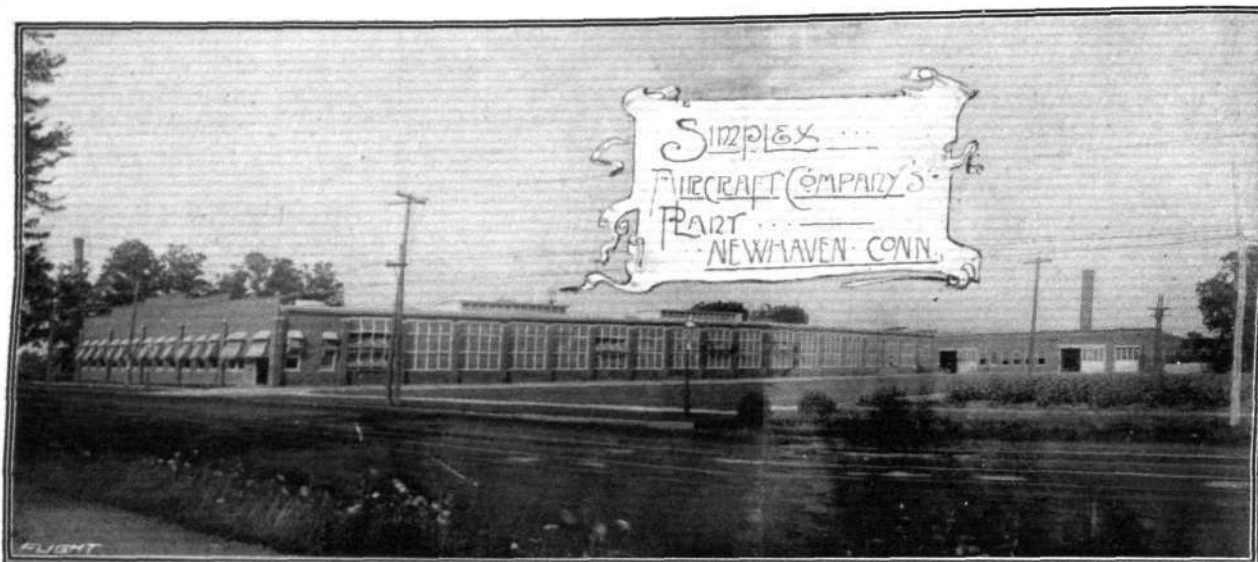
A glance at the illustration of the partly assembled fuselage, and also that of the wing frame, will reveal several interesting constructional details. For instance, in the case of the latter illustration, it will be seen that the ribs, which are constructed of 3-ply birch and mahogany, are not called upon to carry any compression stresses, functioning solely as load members. There are, however, three stout cross-struts between the spars which, together with the wire bracing, take all compression stresses. It will also be noticed that the spars are of substantial proportions, channelled out for lightness at intervals, and that the trailing edge is of steel tubing. Note should also be made of the steel fittings



Two views of the 90 h.p. "Simplex" (Mayo) tractor biplane in flight. Below, just getting off with three passengers.

Constructional details of the 90 h.p. "Simplex" (Mayo) tractor biplane.—Left: Two control arms, as fitted to the elevators, ailerons and rudders. Right: The framework of one of the main planes. Note the cross struts for taking compression stresses.



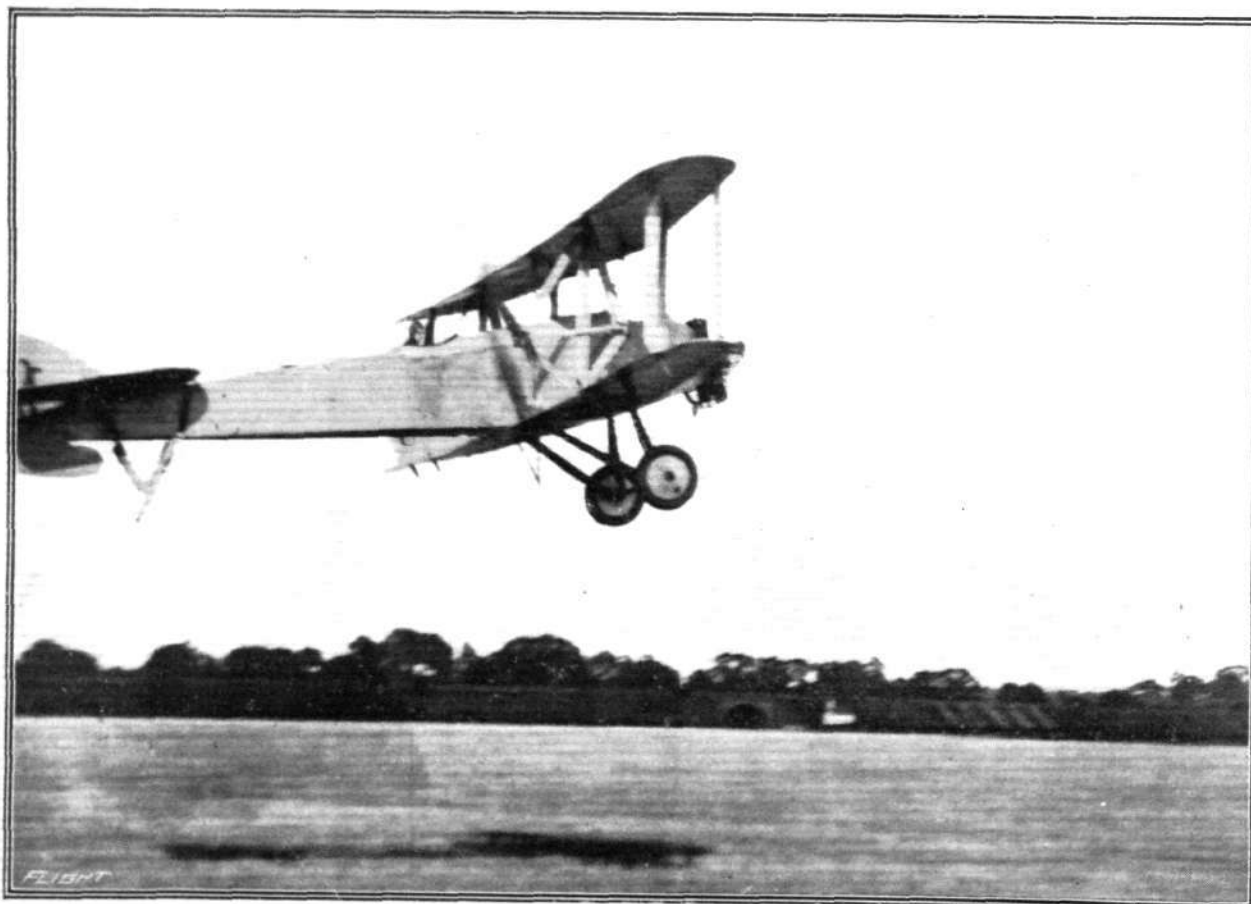


A general view of the large works at New Haven, Conn., U.S.A., where the "Simplex" (Mayo) machines are built.

at the various joints, &c., which obviate the piercing of the spars and other members. The control arms for the rudder, elevators and *aileron*s shown on the left of the illustration in question are die stampings from special sheet steel.

The method of mounting the 90 h.p. Gyro engine between two steel beds rigidly secured to the *fuselage* longitudinals is clearly shown in the other illustration, whilst a good view of the control may be obtained. All the moving members of the latter have ball-

bearing shafts, wheels and pulleys. As in the case of the planes, steel fittings are to be found connecting the various members, so that nowhere are the longitudinals pierced. The fittings attaching the chassis struts to the body are of the quick detachable type, so that the chassis can quickly be dismantled. In fact, quick detachable fittings are largely used throughout the machine, and the time taken to assemble from crates is claimed to be 28 minutes, 20 minutes being required for dismantling.



Mr. Rowland Ding just getting off on the Mann biplane.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Aviators' Certificates.

THE following Aviators' Certificates have been granted:—

- 1458 2nd Lieut. Claude Alward Ridley (Maurice Farman Biplane, Military School, Farnborough). July 9th, 1915.
- 1459 Flight Sub-Lieut. Walter Brogden Lawson, R.N.A.S. (Caudron Biplane, Royal Naval Air Station, Eastchurch). July 18th, 1915.
- 1460 2nd Lieut. Richard Raymond-Barker (12th Northumberland Fusiliers) (Hall Biplane, Hall School, Hendon). July 18th, 1915.
- 1461 Rowland F. S. Morton (Maurice Farman Biplane, Military School, Brooklands). July 24th, 1915.
- 1462 Alfred Barton Adams (L. and P. Biplane, London and Provincial School, Hendon). July 24th, 1915.
- 1463 Flight Sub-Lieut. Colin Charles Wyllie, R.N.A.S. (Grahame-White Biplane, Grahame-White School, Hendon). July 24th, 1915.
- 1464 2nd Lieut. Harry Cunliffe Hopkinson (Shropshire Light Infantry) (Maurice Farman Biplane, Military School, Shoreham). July 25th, 1915.
- 1465 Eric Claude Redgrave-Gunner (L. and P. Biplane, London and Provincial School, Hendon). July 25th, 1915.
- 1466 Capt. James Dalziel Waddell (Welsh Regt.) (Maurice Farman Biplane, Military School, Shoreham). July 25th, 1915.
- 1467 John MacLarty (Maurice Farman Biplane, Royal Naval Air Station, Eastchurch). July 5th, 1915.
- 1468 Edmund May Pizey (Caudron Biplane, Royal Naval Air Station, Eastchurch). July 22nd, 1915.
- 1469 Herbert Sykes (Caudron Biplane, Ruffy-Baumann School, Hendon). July 25th, 1915.
- 1470 2nd Lieut. Owen Hughes (10th Worcestershire Regt.) (Maurice Farman Biplane, Military School, Farnborough). July 25th, 1915.
- 1471 H. J. English (Caudron Biplane, Royal Naval Air Station, Eastchurch). July 25th, 1915.
- 1472 Ralph Pool Turner (Maurice Farman Biplane, British Flying School, Le Crotoy, France). July 26th, 1915.
- 1473 Claude Perrett (Maurice Farman Biplane, Royal Naval Air Station, Eastchurch). July 27th, 1915.
- 1474 Herbert George Brackley (Caudron Biplane, Royal Naval Air Station, Eastchurch). July 27th, 1915.
- 1475 2nd Lieut. William Leefe Robinson (Maurice Farman Biplane, Military School, Farnborough). July 28th, 1915.
- 1476 Flight Sub-Lieut. Ernest William Norton, R.N.A.S. (Maurice Farman Biplane, Central Flying School, Upavon). July 29th, 1915.
- 1477 Lancelot Edward Maclean-Hayes (Maurice Farman Biplane, Military School, Brooklands). July 29th, 1915.
- 1478 Frederick James Harry Thayre (Maurice Farman Biplane, Military School, Brooklands). July 29th, 1915.
- 1479 Edward Roylyn Norman Hyde (Maurice Farman Biplane, Military School, Birmingham). July 29th, 1915.
- 1480 Lieut. Charles Herbert Dixon (Caudron Biplane, Ruffy-Baumann School, Hendon). July 29th, 1915.
- 1481 2nd Lieut. John Sowrey (Queen's Regt.) (Maurice Farman Biplane, Military School, Birmingham). July 29th, 1915.
- 1482 Robert Barton (Maurice Farman Biplane, Military School, Birmingham). July 29th, 1915.
- 1483 2nd Lieut. George Bailey Hodgson, R.G.A. (Maurice Farman Biplane, Military School, Birmingham). July 29th, 1915.
- 1484 Edward Claude England Derwin (Caudron Biplane, Ruffy-Baumann School, Hendon). July 29th, 1915.
- 1485 Capt. James Everidge (Surrey Yeomanry) (L. and P. Biplane, London and Provincial School, Hendon). July 29th, 1915.

THE FLYING SERVICES FUND

administered by

THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.

	£	s.	d.		£	s.	d.
Total subscriptions received to July 28th, 1915...	9,398	1	5	W. Pryor (Second contribution) ...	5	0	0
Rev. R. H. Dickson...	2	2	0	M. J. L. ...	0	10	0
Lieut.-Com. W. A. Dickson ...	1	1	0	Edward W. Nicholls...	2	2	0
George V. Dickson ...	1	1	0	Collected by Mrs. Anderson ...	35	10	0
Mrs. Hinton Stewart...	3	3	0	Total, August 4th, 1915 ...	9,448	10	5

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

FROM THE BRITISH FLYING GROUNDS.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Last week work done included: Straights with instructor: Probationary Flight Sub-Lieuts. Beare, Gasson, Raach-Pierson and Smethurst. Straights alone: Probationary Flight Sub-Lieuts. Hodges and Sieveking. Circuits with instructor: Probationary Flight Sub-Lieuts. Barrington, Blake, Dallas, Douglas, Murray and Perham. *Brevet* taken during week: Probationary Flight Sub-Lieut. Pearson. Instructors during week: Messrs. Manton, Russell and Winter.

Beatty School.—The following pupils were out during last week, accompanied by the instructors, on Beatty-Wright machines: Messrs. Arbon (57 mins.), Bond (30), Crossman (16), Delves (45), Eaton (20), Fox (10), T. Jones (40), King (49), Robb (40), Ross (12), Rutherford (40), Theo (10), Tomlinson (45), Onley (36). The following received instruction on the Caudron machine:

Messrs. Alcock (25 mins.), Arter (30), Banks (10), Berridge (20), Boysen (13), Broadbent (15), Cadogan (5), Collett (15), Cox (10), Davison (10), Fawcett (5), Fellowes (30), Goodfellow (25), Greenhill (30), L. F. Jones (35), Kirkwood (20), Litton (10), Moxon (10), Middleton (10), Nash (25), Overton (10), Owen (35), Rutherford (25), Smith (10), Spicer (15), Staggs (20), Thompson (10), Tolhurst (45), Tomlinson (5), Tremlett (5), Whincup (10), Willmetts (5). The instructors were Messrs. G. W. Beatty, W. Roche-Kelly, C. B. Proddger, and A. E. Mitchell, the machines in use being Beatty-Wright dual control and single-seater propeller biplanes and Caudron tractors. Extra practice was continued by Messrs. Blandy and Kenworthy.

Two very good certificates were taken, the one by Mr. Robb on Thursday, after just over two hours' actual flying, the other by Mr. Rutherford on Friday after 3½ hours' flying.

Exhibition flights were given on Thursday, Saturday and Sunday, and 6 passengers were taken.

Hall School.—Pupils receiving instructions last week with H. F. Stevens on *brevet* tractor No. 2: Messrs. Booker, Gay, Snowdon and Lieut. Philpott, all doing circuits, figures of 8 and landing practice. Pupils with instructor, C. M. Hill: Messrs. Gordon (34 mins.), Bell (14), Milborne (6), Hatchman (16), Huggan (13), Goodrich (21), Watson (16), Bangs (27), Bayley (10), Yonge (10), Cook (4), Littlewood (33), Russell (8), Drew (17), Punnett (8), Hamer (6), and Lieut. Jowett (20).

London and Provincial Aviation Co.—Pupils doing rolling last week: Messrs. Wynne Eyton, Roe and Woodley. Straights: Messrs. Chapman, Welsford, Burton and Moynihan. Circuits and eights: Messrs. Everidge, Irwing and Jacques.

Certificates were taken during the week by Capt. Everidge and Mr. G. Irwing, who both made very good flights.

Instructors: Messrs. M. G. Smiles, W. T. Warren and James.

Ruffy-Baumann School.—Last week, although the weather was far from favourable for flying, four certificates were taken by the following pupils:—Herbert Sykes, Lieut. Dixon, Lieut. Kenneth Mathewson, and E. C.

Aircraft Fabric Contraband.

A ROYAL Proclamation appearing in the LONDON GAZETTE of the 30th ult., prohibits the exportation of cotton fabrics suitable for aircraft.

Three Days' Rest at the R.A.F.

AFTER running incessantly night and day for twelve months, the Royal Aircraft Factory at Farnborough closed down on Saturday

England-Derwin, all of whom made remarkably good performances on the 50 h.p. Caudron type biplane and the 50 h.p. Ruffy-Baumann biplane. Among pupils doing straights, circuits, and figure eights were: May, Gardner, Liddell, Railton, Owens, Belton, Young, Fitzsymons, Derwin, Mathewson, Dixon. Four more pupils are ready for their certificates and are only awaiting favourable opportunity to complete the tests. Many passengers have been taken, including several ladies. Instructors: Edouard Baumann, Felix Ruffy, Gino Virgilio, Clarence Winchester.

Northern Aircraft Co., Ltd.

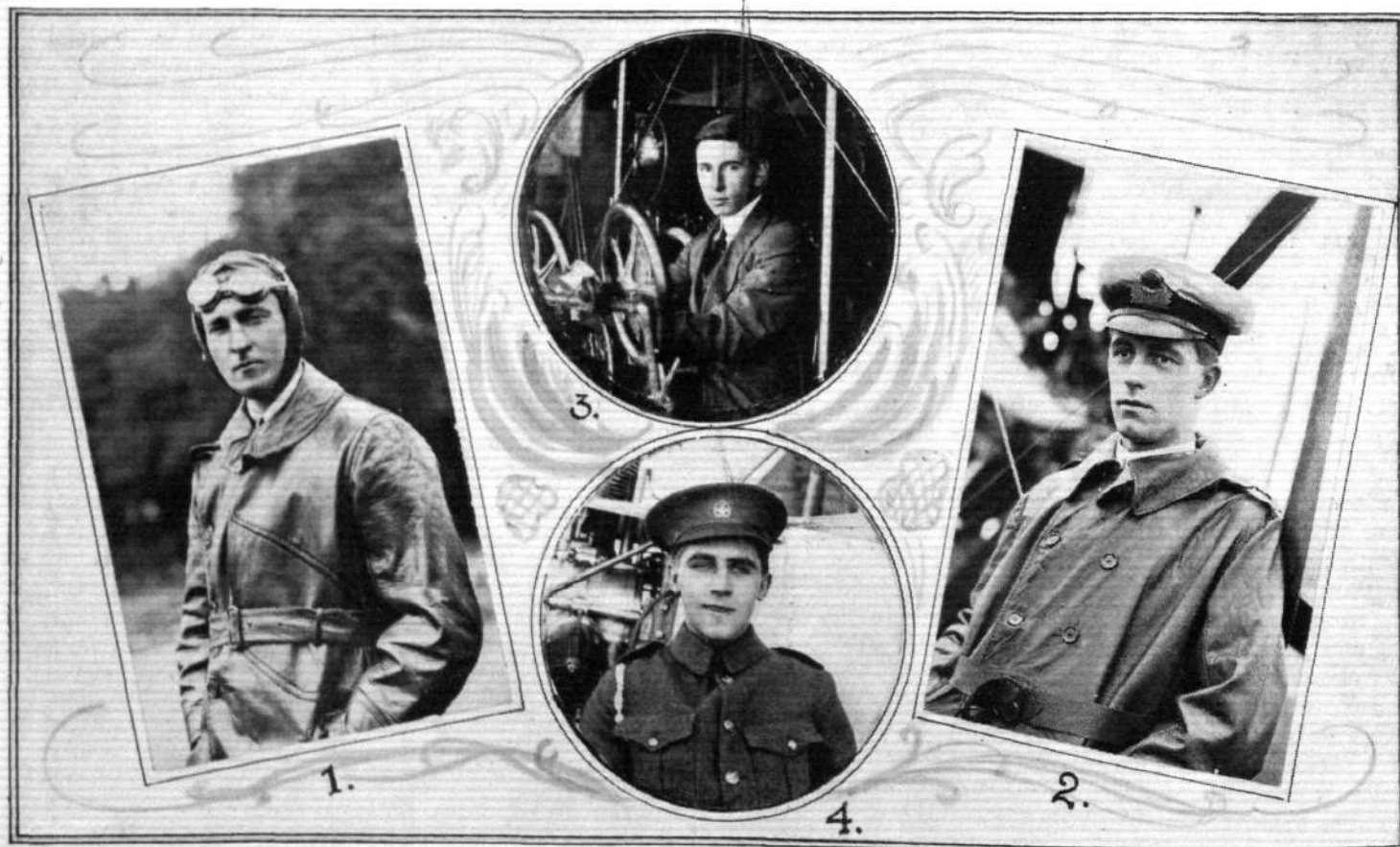
The Seaplane School, Windermere.—Flying was in operation last week on Monday, Wednesday, Thursday, Friday, Saturday, and Sunday. The instructors were W. R. Ding and J. Lancaster Parker, and machine in use N.A.C. pusher 50 Gnome. Up with instructor: Benson (30 mins.), Lawton (21), Part (60), Inglis (33), Robertson (41), Ridgway (49), Yates (32). With instructor in passenger seat: Barber (29 mins.), Laidler (17), Macaskie (14), Macintyre (42), Slingsby (45), Sibley (58). Sibley took an excellent ticket, his landings being notable.

Several passengers were carried, and both Mr. W. R. Ding and Mr. J. L. Parker were out giving solo flights.

until Tuesday morning, so that the 4,000 employees were able to take three days' rest.

French Eligible for Zeppelin Rewards.

IT is reported by the JOURNAL that in response to an enquiry as to whether French pilots were eligible for the ten £1,000 rewards for destroying Zeppelins, Lord Michelham has replied: "Of course, I never thought of making any distinction between your brave airmen and ours."



Some pupils who have recently secured their Royal Aero Club certificates at the various flying schools.—1. Flight Sub-Lieut. G. R. H. Talbot, R.N.A.S., Chingford R.N. Air Station, June 27th. 2. Flight Sub-Lieut. F. J. Linnell, R.N.A.S., Grubame-White School, June 19th. 3. Mr. P. A. Johnston, Beatty School, June 4th. 4. Mr. E. L. G. Dower, L. and P. School, July 6th.

FLYING AT HENDON.

MARCH winds and April showers, with one or two characteristics of the various other months thrown in, is the only way of describing the weather conditions at Hendon last week-end. Saturday was a bit overcast and rather bumpy, but fortunately the rain kept off. Just before 3 o'clock Flight Lieut. F. W. Merriam paid an aerial visit on a Maurice Farman, and punctually at 3 p.m. M. Osipenko ascended on a 50 h.p. G.-W. school 'bus. C. B. Prodger then came out on the 60 h.p. Beatty-Wright biplane, and Osipenko took up a passenger 'on the G.-W. 'bus. J. S. B. Winter took over a similar bus shortly after, whilst Prodger ascended once more on the 60 h.p. Beatty-Wright. He had not been up long before the left-hand propeller went for a joy-ride on its own, whereupon Prodger very smartly switched off and made an excellent landing. The propeller, after making a steep *volplane*, was picked up practically undamaged. In the meantime Osipenko got busy with passengers on the G.-W. school 'bus, and E. Baumann and G. Virgilio gave exhibitions on the 60 h.p. and 50 h.p. Ruffy-Baumann biplanes respectively. Prodger next got away on the 50 h.p. Beatty-Wright, and H. F. Stevens made a high flight on the 45 h.p. Hall Caudron. A little later W. Roche-Kelly came out on the 45 h.p. Beatty-Caudron, but as the engine was not up to revs. he was unable to climb very high. After a couple of passenger flights by Winter on the school 'bus, Osipenko took up two passengers on the 100 h.p. (Green) G.-W. five-seater. In the meanwhile the 125 h.p. Mann twin-pusher biplane had been taken over to the far side of the aerodrome so as to start off head to wind, but trouble was still experienced with the petrol feed, and it was not until nearly 5 o'clock that W. Rowland Ding at last got it into the air and made a short trip. At the same time Flight-Lieut. Sydney Pickles came out on the new Curtiss tractor and put up some very fine banks, &c.



The Explosion at Wormwood Scrubbs.

THE following is the report of the London Fire Brigade in connection with the explosion at the airship shed at Wormwood Scrubbs on the 28th ult. ;—

"The Brigade were called at 10.37 a.m. to the premises of the Royal Naval Air Service, Wormwood Scrubbs, Shepherd's Bush, W. The cause and the insurance are unknown. Damage: A shed building, about 350 ft. by 80 ft. (used as store), about one-fourth of the contents damaged by fire and explosion, rest of building and the contents damaged slightly by heat, smoke and water.

"P. W. Tarlott, Thomas J. Pendlebury, ages unknown, Arthur Matthews aged sixteen years, Stanard Warne, aged twenty years, and James A. Morris, aged thirty-five years, all burned on bodies; E. B. Jarvis, aged eighteen years, injured by bruises and 'gassed'; George W. C. Haydon and F. J. Westerman, ages unknown, burned to death. Death occurred before the Brigade were called."

Inquest on the Victims.

AN inquest on G. W. C. Haydon (19) and F. J. Westerman (28), of the R.N.A.S., who were killed in the hydrogen explosion at Wormwood Scrubbs, was held at Hammersmith on the 31st. It was intimated by the Admiralty representative that there was no reason for the inquiry to be held in camera.

Flight-Lieutenant Dunville, stationed at Wormwood Scrubbs, said the deceased men were under his command. On Thursday orders were given to draw off hydrogen from several cylinders, and during the process the gas suddenly exploded. He could not account for the explosion, and it was not caused by any irregularity in the cylinders. It was purely accidental, and was not due to any neglect or carelessness on the part of anyone. The explosion was one of considerable force, and the shed was damaged, the sides being burst out. A good many other men who were in the shed were injured, but with one exception they were going on well.

In reply to questions, the witness said hydrogen was very highly explosive when it came into contact with air, and he had heard of a similar accident with it. He was in charge of the shed, which

School work then commenced to merge with the remaining passenger and exhibition flights that were made during the rest of the evening.

Sunday was a much more pleasant day, and there was a very good attendance—reminiscent somewhat of Sundays of old. There was plenty of flying, but this differed only a little from the previous day's, most of the pilots and machines being the same. G. Virgilio and E. Baumann were both out on the 50 h.p. and 60 h.p. Ruffy-Baumann biplanes. Baumann made a high flight, and was loudly applauded by the spectators at its conclusion. M. Osipenko flew the 50 h.p. G.-W. school 'bus, and also took up many passengers on the 100 h.p. five-seater. J. S. B. Winter was also busy on the 50 h.p. 'bus, and C. B. Prodger made several flights on the 60 h.p. Beatty-Wright.

W. Rowland Ding had the 125 h.p. (Anzani) Mann twin-pusher biplane out again. He made two flights, but as trouble is still being experienced with the petrol feed, they were only of about ten minutes' duration.

Only three flights were made on August Bank Holiday owing to the high wind—about 45 m.p.h.—and heavy rain storms. However these three flights were well worth seeing, as they were fine examples of airmanship. The first flight was made by C. B. Prodger on the 60 h.p. Beatty-Wright. He remained aloft for about 15 mins., and was tossed about pretty roughly. It was not until Osipenko ascended on the 50 h.p. G.-W. school 'bus that the full force of the wind was demonstrated, for the machine pitched and tossed in an extraordinary manner for about ten minutes, when Osipenko thought he had had enough, and so descended. A little later on Prodger ascended once more, but was compelled to make for Mother Earth again rather suddenly, though safely, owing to a heavy downpour of rain. It was then that the weather broke up altogether, and no more flying was possible.



was surrounded by sentries, whom it would be impossible for anyone to pass.

Wing-Commander F. Boothby said he was called from his office by an officer, who stated that there had been an explosion in one of the sheds. He arrived at the shed at the same time as the Fire Brigade. The building was full of smoke. At that time a party of officers and men were extinguishing the fire, and they had it well in hand. Some of the gas cylinders were still burning. The Fire Brigade assisted and the flames were got under.

In answer to further questions, witness said that when hydrogen gas was mixed with a certain proportion of air it became explosive. He had previous experience of cylinders catching fire spontaneously, but it was a rare occurrence. He knew of four cases in this country, and two cases in Germany in which airships had been destroyed by the same means. As to the cause of the spontaneous combustion, witness said the matter had been referred to the best scientists of the country, and no one had been able to discover the cause.

It might be due to the electricity in the air, and at the time of the explosion there was thunder about. It might be due to friction caused by small pieces of metal in the cylinder. Another supposed cause was oil in the cylinder. All these theories had been tested, but none had been proved. So far as he knew, the explosion did not occur in connection with anything else except the valve of the cylinder, and he was perfectly satisfied that there was no carelessness or negligence on anybody's part.

The Coroner: It might have occurred, according to your evidence, at any time and under all sorts of conditions?—Yes.

In your opinion this was a spontaneous combustion of hydrogen?—Yes.

Sergeant Woolger, of the London Fire Brigade, and Sub-Officer Chappel, gave evidence showing that the fire was quickly extinguished with water. They were satisfied that the cause of the explosion was accidental.

The jury returned a verdict of "Accidental death," and found that the explosion was due to the accidental ignition of hydrogen gas.

EDDIES.

THEY are telling an amusing yarn out at Hendon, the chief figure of which is a young "knot" who got flight-struck the other day and thought he would like to experience for himself the sensations, literally speaking, of being in the air. He arrived at the gates on a very boisterous day and demanded a passenger flight, not one of those silly little stunts of a couple of circuits, if you please, but a real flight over the surrounding country. While the prospective joy rider was being toyed with at the office, the hangars were scoured for a pilot to take him up, a by no means easy task as the weather was, as mentioned, not in the least suitable for flying. However, after some little delay a pilot was ultimately found who declared himself willing to go for a spin with a freight, and after duly parting with the "fare," which, I understand, was pretty considerable in view of the real flight wanted, Mr. Filbert settled himself in the seat allotted to such men of distinction. After one or two swings of the propeller the engine got going, and was given a trial run, during which the passenger's attitude was one of studied indifference. The pilot waved his hand, the mechanics let go and away went the machine. After its usual run along the ground the 'bus lifted gently, but it had no sooner commenced to climb than the passenger was seen to be hammering the pilot's back with his fists, and the latter, not used to this treatment from his usually delighted passengers, lost no time in coming down. As soon as the ground was touched the would-be aviator scrambled out and made for his waiting car, taking no notice of sporting offers of a flight on a more suitable day. I hear that this "sport" has since made up his mind *not* to try his luck at getting a commission in one of the flying services.

x x x

Paying a brief visit to the Beatty works at Hendon the other day, I learnt that the different parts for the new 4-cyl. Beatty engine are now beginning to come in from the makers, and that the first of these should, if all goes well, be ready during the present month. Of alterations, chiefly suggested by Mr. Beatty himself and worked out in detail by his designer, Mr. W. F. Claxton, may be mentioned the substitution of a split crank case for the one-piece unit employed in the older type engine, and mechanically operated inlet instead of automatic valves. The oil sump is cast integral with the bottom half of the crank case and lubrication is by means of excentric pump driven off the crank shaft. The method of mounting the new engine has been redesigned, taking now the form of holding down bosses cast integral with the crank case. These bosses are threaded internally to receive the transverse steel tubes, an arrangement which allows of easily centring the engine. The pistons have been shortened a little, but three rings are still fitted. "H" section connecting rods will replace the tubular rods formerly fitted, as it has been found that greater strength can be obtained by their use, without adding to the weight. Exhaust and inlet valves are identical and interchangeable. The valve heads are of cast-iron, and the stems, which are screwed into the heads and riveted over, are of Tungsten steel. Altogether the new engine, as far as can be judged from the drawings and some few finished component parts, will be an improvement on the older type, which, by the way, did extremely well, developing about 20 per cent. greater h.p. than was anticipated.

I had a chat with Mr. Manton the other day about his impression of the B.E. 2c, which he flew recently. Opinions vary so much regarding this type of machine that it is always most instructive to hear fresh views on this subject. Although it was his first flight in a B.E. 2c, Manton said he had no difficulty in handling it once he got the "feel" of the machine. She flies, he says, practically on the throttle, accelerating causing her to climb and throttling bringing her down on an even keel. Asked whether he found her sluggish on the warp, or more correctly speaking, *aileron*s, Manton pointed out that although she did not answer so readily as some other types, she could not by any means be called sluggish, and if left to herself would, he thinks, recover automatically.

x x x

In view of his unquestionable ability and extensive experience of various types of machines, it is not surprising to learn that Mr. Sydney Pickles has been granted leave to resign from the R.N.A.S. in order to devote his services entirely to the testing of machines built for the Admiralty by various contractors. Although his departure will mean a loss to the R.N.A.S., there can be little doubt that Mr. Pickles will be serving his country quite as effectively in this way, the number of skilful pilots available for this class of work being at present strictly limited. With Mr. Pickles' experience the Admiralty may feel confident that all craft will be thoroughly tested before being taken over, whilst contractors may be equally certain that he will get the best results possible out of their machines.

x x x

By the way, on Wednesday evening, round about 7.30, Mr. Pickles was, after a preliminary run, up for half an hour on the Mann biplane, climbing to a height of 3,000 ft. in 10 mins. Trouble with the mixture, however, prevented him getting the full power out of the engine, and when this and a few "weight details" have been attended to he hopes to get still better results.

x x x

Ever ready to secure talent when available, it is not surprising to hear that the Austin Motor Co., Ltd., who are seriously tackling the building of aeroplanes on a large scale, have obtained the assistance of Mr. J. D. North, whose work up to the present has been chiefly known in connection with the Grahame-White Aviation Co., where he has occupied the position of chief designer for some time. I shall look forward, having regard to Mr. Austin's business acumen, to seeing some interesting machines come out of the works at Northfield, Birmingham, when the war is over. In the meantime both sides of the bargain are to be congratulated.

x x x

An interesting account of a reconnaissance flight over enemy country has been sent home by a German military pilot from the front. "Although it was very early morning," he writes, "and everything was dark, we were all—pilots, observers, and mechanics—on the spot ready for the start, which was due to take place at daybreak. My engine was running as regular as clockwork, so that I felt that I could rely upon it, which was the main thing. I started second, and soon we had reached an altitude of 6,000 ft. The view became constantly clearer, and more and more plainly could we distinguish the horrors of war. The country lay below us as a great relief map, and we

judged that we must be some five or six miles from the enemy's lines. After flying on for another few minutes we decided that we must be a good distance behind the enemy's trenches, and came down from 8,000 ft. to 5,000 ft., still hidden from view in the clouds. Suddenly we caught a short glimpse of the ground through a rift in the clouds, and then immediately we were again enveloped in another. At 4,000 ft. we came out of the clouds, and could from this height see everything quite plainly."

x x x

"A few seconds after emerging the first bullets whizzed past us, and as we expected the artillery to start at any moment we made a quick turn and were soon hidden in a cloud. This is the safest hiding place, as one can then unobserved alter one's course and leave no target for the enemy. Again we came down to get a view of the ground, and succeeded in getting our photographs and notes, still flying near the clouds in case the enemy should open fire on us. We had completed our mission and were just getting ready to turn about and make for home, when, as though they had realised our purpose, the enemy did open fire. Infantry and artillery both let go at us, and the machine swayed terribly. Instinctively I glanced at my petrol gauge, which showed the tank to be nearly empty. Where had the petrol gone? Half an hour ago the gauge had shown plenty, and now as I watched I could see it sinking. The tank had been hit, and realising this I lost no time

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More Aircraft from Britons Overseas.

By the efforts of the Patriotic League of Britons Overseas, which was started at the end of last year to supplement the work of the Overseas Club, by taking in British residents in foreign countries, a fund has been raised for the purchase of seaplanes for the Navy, and a cheque for £35,000 for the provision of a squadron of ten has just been sent to the Admiralty. The gift has been acknowledged by the First Lord in the following letter to Lord Aldenham, Vice-Chairman and Hon. Treasurer of the League:—

"My dear Aldenham,—On behalf of the Board of Admiralty, I have to acknowledge with our hearty thanks the receipt of the cheque for £35,000 which you have sent me in the name of the Patriotic League of Britons Overseas. This practical manifestation of the loyalty of the King's subjects outside his Dominions will equip the Royal Navy with a squadron of seaplanes of the latest type, to be named 'Britons Overseas.' In this manner the aim of the League will be realised and expression given to the spirit of helpful loyalty to the Empire which your report of progress shows to be shared by Britons all over the world.—Yours very truly,

"ARTHUR JAMES BALFOUR."

Branches of the League have been started in Brazil, Chili, Bolivia, China, Japan, Morocco, Persia, &c., and British subjects abroad who are anxious to further the movement are requested to write to Mr. W. Maxwell Lyte and Mr. Evelyn Wrench, joint Hon. Secretaries of the League, General Buildings, Aldwych, London, W.C. Subscriptions are still being received, and it is proposed to add to the squadron as funds permit.

It may be recalled that the Overseas Club is confined to Britons living within the Empire, and their efforts have resulted in the presentation of nine aeroplanes to the British Flying Services.

New Types of Zeppelins.

THE DAILY MAIL correspondent at Vevey, writing on the 30th ult., said another super-Zeppelin has just been launched at Friedrichshafen, Lake Constance. It differs considerably in shape from previous craft. The rear part of the envelope is blunt instead of being pointed. The airship possesses two armoured cabins, containing small guns, and has three triple-bladed propellers, which give tremendous speed.

New Zeppelin Airships.

WRITING from the North of France on the 3rd inst., the DAILY CHRONICLE special correspondent said:—It is nearly two months since the Germans were obliged to confess that, whatever the theoretical value of their Zeppelins, they did not come up to military or public expectations.

The Germans then had to choose between two alternatives, to give up further Zeppelin raids or to make them more efficacious.

in throttling down the engine to the most economical speed, trusting that our altitude and the small supply of petrol in the reserve tank would enable us to reach our own lines. Both my observer and I were so busy watching the petrol gauges that we did not notice that a hostile machine was approaching us from behind and flying at a height of 8,000 ft. It was impossible for us to climb, and to come down would mean being exposed once more to the enemy's fire. I opened the throttle fully to try and escape, but the other machine was already above us. At a distance of a couple of hundred yards both observers opened fire, and a few nerve-racking seconds ensued.

x x x

"Suddenly the other machine began to sway from side to side, then it turned on its nose and dropped. My observer had hit the hostile pilot. A few minutes later our petrol gave out, the engine stopped, and we commenced to glide down. By keeping the glide as flat as possible I succeeded in just reaching the safety of our own lines, where we promptly landed. I jumped out of the machine, happy at having escaped, and approached to shake hands with my observer, who had, I knew, saved my life by hitting the hostile aviator. But it was not to be. I found him lying motionless in his seat. My best friend and companion was dead! Such is the fortune of war. We had carried out our mission, however, and done our small share towards helping success to our country."

"ÆOLUS."

⊗ ⊗

The first alternative would have hurt their pride too much. It would have been an avowal of their mistake. So they had to look for new and ingenious means of remedying the defects in their immense gasbags.

So great was their fear, however, of our naval airmen's expeditions that they resolved to withdraw their Zeppelins for the time being from Belgium and proceed with the difficult task of improvement.

Here are some particulars of what results the Germans have obtained so far.

They have slightly increased the ascending power of some types and by providing a greater number of motors have increased the speed by 25 per cent.

They have installed an apparatus for the distribution of Hertzian waves, which will enable the operators to control for a distance of two miles the direction of aerial torpedoes. The number of machine guns on the top of the dirigible has been augmented.

It seems that they have not been able to achieve any encouraging result in the armouring of the top of the Zeppelin or in the attempt to shape it like a pointed roof so that bombs should fall harmlessly down the sides. They have had to content themselves with adding to the number of interior compartments in the hope of losing as little gas as possible at each breach.

To sum up, they have succeeded in creating Zeppelins a little better armed, a little larger, with a little stronger ascending power, a little less vulnerable and considerably more rapid.

Brussels Punished for Lost Zeppelin.

THE Havre correspondent of the PETIT PARISIEN, writing on the 29th ult., stated that, according to a person who left Brussels on the 10th ult., the Germans have imposed a new fine of £200,000 on the city on account of the destruction of a Zeppelin in its shed at Evere just outside Brussels, by Flight Lieut. J. P. Wilson and Flight Sub-Lieut. J. S. Mills in the first week in June.

German Airships and Trawlers.

ADVICES from Amsterdam last week-end reported that a Dutch trawler on arriving at Ymuiden reported having been held up at sea by a big German airship—"L39," according to one account—which after examining the vessel disappeared.

An Aeroplane Chase in Roumania.

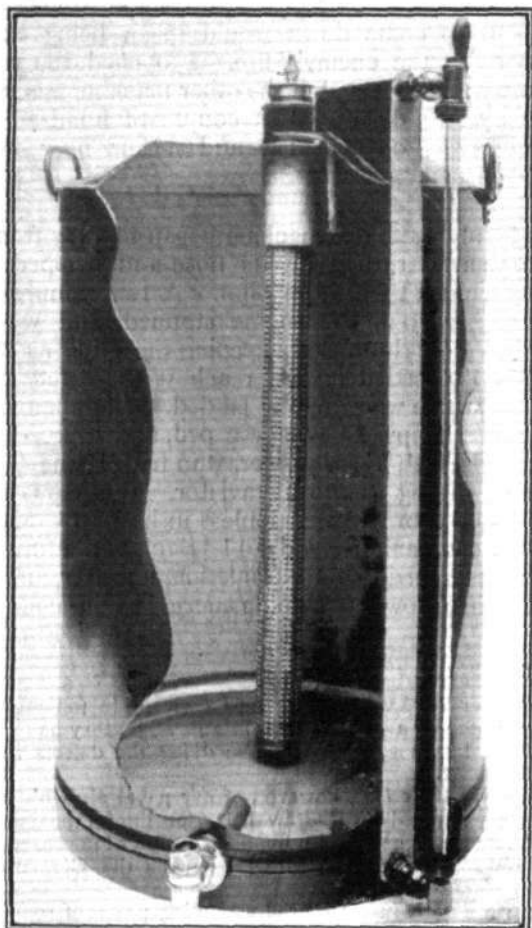
INFORMATION was received in Paris last Friday from Dedeagatch to the effect that a German aviator had flown over Bucharest and had been chased off by Roumanian pilots. It was stated that the machine, which thus infringed Roumanian neutrality, was at a height of about 1,500 ft. and carried a searchlight. With glasses the black cross on the wings, which is the mark of German war aeroplanes, could be plainly seen.

SAFEGUARDING AGAINST FIRE AND EXPLOSION— THE "SNERCOLD" SYSTEM.

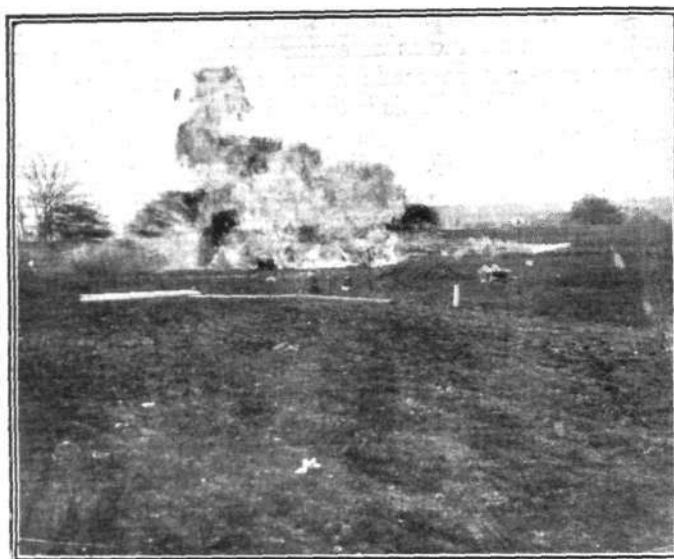
ALTHOUGH the instances of late on record of aeroplanes catching fire in the air or after a bad landing are fortunately comparatively few, those which have occurred serve to emphasise the ever-present

dangers of petrol as a fuel. Few as the accidents have been from this cause, they have in the past cost the lives of valuable pilots, and any device which may tend to prevent the recurrence of such mishaps should be accorded a ready welcome.

It may be said that the danger in connection with petrol is of two kinds; there is, first of all, the extreme explosiveness of a mixture of petrol vapour and air, and secondly, the ready inflammability of petrol itself. One device which has been designed to meet these dangers and overcome them, and which has attained a considerable



A storage reservoir protected against fire, explosion, and bursting by the Snercold method. In the case of a fuel tank as carried on an aeroplane the arrangement is on identical lines. It will be seen that each ingress or egress aperture carries a separate protective unit.



Photograph showing an ordinary drum subjected to the same conditions as in the first test, with the result shown. In the foreground, marked with an X, is a Snercold protected drum which was unaffected by the explosion.

success in connection with motor car practice, demonstrating its efficacy for the purpose, is what is known as the "Snercold" system.

The functions of the "Snercold" safety device, it must be clearly understood, are twofold—to prevent explosion and bursting of the tank in the event of external fire, and ignition of its contents under any circumstances short of actual fracture of the tank itself. It is necessary to draw the distinction between explosion and bursting, since these two entirely dissimilar actions are often confused as being one and the same thing. In the case of a partly filled tank the space above the level of the liquid is probably occupied by a



A TEST OF THE SNERCOLD SAFETY DEVICE.—A 40-gallon transport drum, three-quarters full of petrol, was buried under inflammable material, and the latter ignited. One minute after the fire was started the second photograph was taken, at which time the heat had been sufficient to release the plug and relieve the internal pressure. There was no bursting or explosion.



ANOTHER TEST OF THE SNERCOLD SAFETY DEVICE.—While yet the flames from the bonfire played around the drum, fresh petrol was poured into the latter from a can, also fitted with the Snercold appliance, as seen in the second photograph. In the left-hand view the flaming vapour issuing from the filling hole is being extinguished with a wet rag. No conflagration of the contents of the drum occurred, and no explosion.

mixture of air and petrol vapour, which, if of proper proportions, constitutes identically the same conditions as exist in the engine cylinders during the induction stroke, and consequently, as we know, is subject to a violent explosion upon the least provocation from flame. Bursting, on the other hand, is of a more mechanical nature, and is due to the contents of the tank being vaporised, which tends to occupy a greater bulk than when in liquid form, and, unless an outlet is provided, consequently exerts a sustained pressure on the walls of such a magnitude that these are unable to withstand.

Now the exclusion of flame from the interior of any receptacle offers no new problem, since in the "Davy" safety lamp the solution has been found and applied for ages past. The "Snercold" safety device employs the same principle, which is that a wire gauze will dissipate the heat of the flame so rapidly that the flame itself is incapable of penetrating its interstices. Shortly, the "Snercold" system consists of a wire gauze cylindrical mantle which is inserted in the filling orifice and other openings or communications to the fuel tank, so that at every point where flames might find a means of ingress the way is barred. As a mechanical protection to the gauze, both inside and outside faces of the cylinder are enclosed by perforated metal sheaths, the construction being such as to allow the ready passage of petrol.

In the case of the particular gauze cylinder inserted in the filling orifice also a special cap replaces that originally closing the hole. In this cap lies the security against bursting, there being inset in its

top a safety plug that blows out at a comparatively low temperature. The inset consists of a simple brass plug soldered into the main body of the filling hole cap, with a solder possessed of a very low melting point, the particular point being dependent upon the strength of the tank and the normal temperature of the air, but in all cases being considerably below that of boiling water.

Beside the evidence of the photographs as to the complete efficacy of the system as a safeguard against danger from fire and explosion, we have witnessed demonstrations which could not fail to convince the most sceptical. At ordinary temperatures there is, of course, an appreciable amount of vapour given off by petrol, which on a moderately warm day may be readily perceived issuing from the mouth of the can and the tank when replenishing the former. This vapour we have seen deliberately lighted, what time the fuel was being poured from one to the other vessel, both of these, of course, being provided with the "Snercold" device. Needless to add, there was no conflagration.

We understand that the cost of completely installing the system by the makers, the Snercold Engineering Co., of Hampton Wick, Middlesex, is very low, the actual sum depending not only on the size and number of the tanks, but also on the system of the fuel supply.

The extra weight of the gauze mantles and their protective metal sheaths should not present any great difficulties for installation on a modern aeroplane, as the whole equipment would at the most only add a few pounds to the load.

AIRCRAFT AND THE WAR.

In a telegram dated July 24th Reuter's special correspondent in the Dardanelles said:—

"From the results of information received at headquarters from our airmen, and from observation posts, it has become evident that large Turkish reinforcements have been massed at various points."

"A *propos* of the threat which had been delivered from aeroplanes to drive us into the sea, the authorities in Constantinople have seriously claimed that their gallant troops have actually effected this on several occasions, but that, owing to their aquatic propensities, the British are invariably able to swim ashore again and regain their positions."

A Central News message from Amsterdam on July 28th stated:—

"Bombs were dropped upon Zeebrugge on four successive nights."

The Sas Vant Gent correspondent of the TELEGRAAF reported on July 28th:—

"A French aviator made an attack on Ghent during the night. He aimed bombs at the machine factory of Carels Brothers, and at Demuiden, where two submarines were lying in the Scheldt, but they failed to do any damage. The last bomb thrown fell on a German guardhouse in the vicinity of the submarine and completely

destroyed it. The airman succeeded in getting away in spite of the great activity of anti-aircraft guns."

In the Austrian *communiqué* of July 28th there was the following:—

"Our waterplanes successfully bombarded the railway station, battery, barracks and other military points at Ancona, causing much damage to the shunting yard as well as destroying a considerable quantity of rolling stock. A petrol reservoir also took fire."

"All the Austrian units returned without loss. The naval forces of the enemy were not sighted."

Writing from Mytilene on July 28th, a *TIMES* correspondent said:—

Anglo-French aeroplanes have again attacked Smyrna, destroying the gasworks and the petrol dépôt. The blockade of the coast of Asia Minor from the Straits to Scala Nova, opposite Samos, is rigorously maintained by the Anglo-French fleet."

The *TIMES* correspondent at Olten, writing on July 29th, said:—

"At 5 a.m. on Sunday an Austrian Taube dropped seven bombs at the Alpine Barracks at Verona. Slight damage was caused to the barracks, and six soldiers were injured, of whom two died. Many arrows were thrown, injuring one man."

"The extent of Austrian espionage is demonstrated by the fact that the raid was made on the only night when Verona was without a protecting air fleet, and half an hour after the regular vigil had ceased."

A report from Calais on July 29th stated that a Taube had flown over Calais and Marquise, dropping bombs which did no damage.

In the German *communiqué* of July 30th there was the following:—

"Two British airmen, who were obliged to descend on the water near the coast, were captured."

In the German *communiqué* of the 31st it was stated:—

"The damage done by enemy airmen was unimportant. A French aeroplane was shot down by our anti-aircraft guns near Freiburg."

Mr. H. F. Prevost Battersby, the *MORNING POST* correspondent at the British Headquarters, writing on July 31st, said:—

"The German airmen have thought that an attack on St. Omer would be worth their while. Had they been able to come to that conclusion a couple of months, or even six weeks ago, there would have been some point in their selection of that particular town for their attentions, but, as has happened before, they have become a little behindhand in their dates."

"The first attack was made on Wednesday, 28th, at 11.30 p.m. Something like half a gale had been blowing from the south-west all day, with heavy rain squalls in the morning, the last sort of weather that would tempt an airman, though, in the ordinary routine of duty, weather seems to be entirely disregarded by the Royal Flying Corps. The wind had moderated towards evening, and the sky cleared, with a more westerly shift of wind. The moon, but two days past the full, rose shortly before nine, and, when the attack was made, was shining with a brilliance which has been specially noticeable during the past week, in spite of much obscured and rainy weather. As is natural, not much reliable information can be obtained of the attack. At that distance from the front people have long since ceased to look up at the sound of an engine in the air to see if it could belong to an enemy, and even near midnight the sound of an aeroplane overhead would not cause any apprehension. It would also require expert observation to discriminate at night between German aircraft and our own, and it was probably the explosion of the first bomb which signalled to anyone the enemy's arrival. Observations made thereafter, when bombs and star shells are dropping from the sky, are naturally somewhat liable to error, and it is not surprising that the aircraft engaged are variously estimated from one to three. It seems certain that between them they dropped six bombs, that they succeeded in killing a couple of civilians, a baker and his wife, and doing a little damage to house property. The attack was repeated at 7 a.m. on the morning of the 30th by a single aeroplane, which dropped one almost harmless bomb, and made off again in a considerable hurry."

In the German *communiqué* of the 1st inst. there was the following:—

"Yesterday the great aerial activity was continued. The British flying ground at Saint Pol, near Dunkirk, was attacked, thirty bombs being dropped. The German aerodrome near Douai was unsuccessfully bombarded by an enemy squadron. Here one of our battle aeroplanes shot down an enemy aeroplane. On the French flying ground near Nancy early this morning 103 bombs were dropped, and eighteen hits were observed on tents. The enemy machines which ascended for the defence could not prevent the attack. Six German aeroplanes attacked fifteen French machines over Château Salins, and during 45 minutes' fighting several hostile machines were forced to land. When enemy

Fatal Accidents in France.

FROM further information received from Paris, it appears that the machine which caught fire and fell near Porte de Versailles, recorded in last week's *Flight*, was piloted by Jean Benoist, while the passenger's name was Maujoin or Migeon. The cause of the accident is unknown.

A message from Chartres states that on July 30th two aeroplanes collided at the local aerodrome. One pilot was burnt to death and the other seriously injured; both machines were wrecked.

German Flyers Killed While Motoring.

ACCORDING to the *MAZIN*, Captain Jaegerhuter and Lieutenant Schinnerer, two of Germany's most prominent aviators, while proceeding in a motor car from Sarrebourg to Rieding, met their deaths. Something went wrong with the steering-wheel, as the car was

reinforcements came up our airmen retreated without loss. To the north of Saargemuend a French aeroplane was forced to descend, and the occupants were captured."

A Central News message from Amsterdam on Monday stated:—

"It is reported from Strassburg that on Thursday last a large air squadron flew over the neighbourhoods of Werkweiler (? Mestzweiler) and Walburg, and dropped twenty-five bombs, without, however, causing much damage. Some persons were injured."

In the German *communiqué* on Monday there was the following:—

"South of the Ban de Sapt our artillery shot down a French captive balloon."

"Near Longemar, east of Gerardmer, one of our battle aeroplanes forced a French aeroplane to land."

The *DAILY TELEGRAPH* correspondent at Rotterdam on Monday reported:—

"This afternoon four Zeppelins passed Vlieland, going in a westerly direction."

Writing on Monday, the *TIMES* correspondent in Paris said:—

"The squadron of German aeroplanes which succeeded in reaching Nancy on Saturday morning dropped a large number of explosive and incendiary bombs. Three civilians were more or less slightly injured, and one or two fires broke out which did not do much damage before they were extinguished."

"Another squadron of five enemy aeroplanes, taking advantage of the haze, again tried to reach the town early yesterday morning, but they were driven off by a French air squadron and by anti-aircraft batteries. Eight German aeroplanes also flew over Lunéville within the space of a few hours. A number of bombs were dropped, but no damage was done."

The *MORNING POST* correspondent at Amsterdam, writing on August 3rd, said:—

"A German airship, the 'L 19,' was sighted off Terschelling to-day by a Dutch steam trawler. It circled several times round the trawler, and shortly afterwards four German torpedo boats came up and made a search on board."

In the German *communiqué* of Tuesday it was stated:—

"A French captive balloon which was torn from its anchorage during a storm was caught by us north-west of Etain."

Mr. G. Ward Price, writing in the *DAILY MAIL* of Wednesday on the first year of war, said:—

"The story of the aeroplane during this war," said M. Maurice Farman, the well-known French constructor, yesterday, "has been one constant series of improvements. The machines we are making now are more reliable, able to carry greater weight, and have a longer range of action than those that were built before the war. The rôle the armed aeroplane is playing in the war is simply immense, and is only equalled by that of the scouting and fire-control machine."

"Moreover, the system of controls has been very much simplified. In six weeks any man of ordinary adaptability can be made a perfect airman."

"What do you think of the new big-engined machines?" I asked M. Farman.

"I think that there's a danger of going too quick. These double-engined machines of immense h.p. are tricky things, and I am afraid there is a chance of bad accidents with them."

"One of the notable developments of the air motor during the war is the gain of the fixed motor at the expense of the rotative type. 'The triumph of the fixed motor,' was one French airman's answer to the question as to what had most struck him in air developments during the campaign."

passing a carriage, with the result that it collided violently with a tree by the roadside, and overturned on the occupants, crushing them so badly that they died almost immediately.

German Seaplane Wrecked.

A REUTER message from Copenhagen on the 29th ult. stated that the fishing cutter "Ane Kirstine" has arrived in Fredericks-haven with the wreckage of a German seaplane, which was fished out of the water some miles west of the Skaw. Parts of the wings, the whole rudder, some tools, &c., which were found indicate that it was a new machine, and that the disaster was of recent occurrence.

Bulgarian Flying Officers Killed.

MESSAGES from Sofia on July 29th, stated that while flying over Sofia a military aeroplane fell owing to motor trouble. The two military officers in the machine were killed.

Models

ALL communications in connection with this section should be addressed to the Model Editor, *Flight*, 44, St. Martin's Lane, London, W.C. Correspondents are requested to write on one side of the paper only.

Machines With More Than Two Propellers.

By V. E. JOHNSON, Esq., M.A.

ONE result of the war has been the speeding-up of the development of those particular types of aeroplane which are especially suitable for fighting purposes. Now it is the essential feature in the development of any fighting weapon to render it, if you can, more formidable than that of your opponent. It is a matter, therefore, of no surprise to learn that the various belligerents are endeavouring to produce a larger, more complex and more formidable weapon than their opponents; in other words, machines of more than one or even two motors and two propellers, of much larger span, and in one case at any rate a double fuselage. The latter, which has been used by the Germans, according to newspaper accounts, was capable of flying round and round those attacking it. In other words, it possessed a greater speed factor, apart altogether from any other advantages it might possess in gun-carrying or bomb-dropping devices. In the case of what are commonly called "Ocean Greyhounds" and other swift-moving vessels one always finds them provided with more than two separate engines and propellers.

Taking the case of the aero models, it is, of course, a well-known fact that, given similarity of design, the twin-propellered model is swifter than that having only one propeller.

Now, so far as we know, very little has been done to develop models of a more complex nature, possessing, say, three, or even four propellers and motors. The writer designed, some time ago, a four-propellered symmetrically arranged "flying stick" model. He was unable at the time to carry out many experiments with the same, but sufficient was done to show that such a model could be got to fly, and that experiment alone was necessary to develop it successfully. In flight the model was very swift. The propellers were so arranged that two were pushers and two were tractors. The framework was T-shaped both ends, and the rubber motors crossed one another in pairs. So far as models with a double fuselage are concerned, we cannot call to mind any of this character which have actually been constructed. If such have been experimented with we should be extremely glad to have full particulars of them, together with any results which may have been obtained with this species of model. In a sense one may look upon the "A frame" flying stick model as such a type in embryo, and we do not think it is any exaggeration to claim that the double fuselage machine (which is said to be so successful in the type referred to) first existed in model form. It may be that models having more than two propellers have been tried, but the point is have they been tried sufficiently, and have any really been designed with an idea to the future development for a full-sized machine? Have they not rather been made with a view to just trying the idea to see what would happen; or it may be even just for the sake of making what was considered to be a "freak" model? Such things have been done. Experiments along such lines are nevertheless well worth conducting, more especially if geared rubber motors were used so as to keep the dimensions of the model more in conformity with

those of its full-sized prototype. The best type for such experiment would appear to be a biplane with the propellers *behind* the main plane. The chief points to note with such a model appear to be its speed, stability and gliding properties. The propellers should be those which are provided with a contrivance which prevents them from revolving when the model is gliding. The rubber motors (assuming rubber to be used) should be enclosed in light streamline bodies, assuming four propellers to be employed; or two of them could be enclosed in the double fuselage. These fuselages could be parallel or nearly so. In the case of more than two propellers only one extra motor container need be used, and in the case of four propellers only two extra need be used. Such models are, of course, innovations, and innovations, at any rate in open model competitions, have not always been received with that favour which one might have expected.

At the present time there are those that consider that two motors in a full-sized machine are really no better than one, if as good, and that the machine of the future must carry more than two, in all probability not less than four motors, with possibly four propellers, or it may be two, suitably geared; all of which goes to show that the problem of the multi-motored model is one which should not be neglected. Of course it is more difficult and far more troublesome in many ways than the single or twin-propellered model. It is a problem which probably only an enthusiast would care to tackle. The initial failures are likely to be great and many, but when once success of only a moderate character, say, had been obtained there would be created an entirely new type of model, with boundless possibilities before it.



AFFILIATED MODEL CLUBS DIARY AND REPORTS.

Club reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

South-Western Aero Club (373, Brixton Road, S.W.).

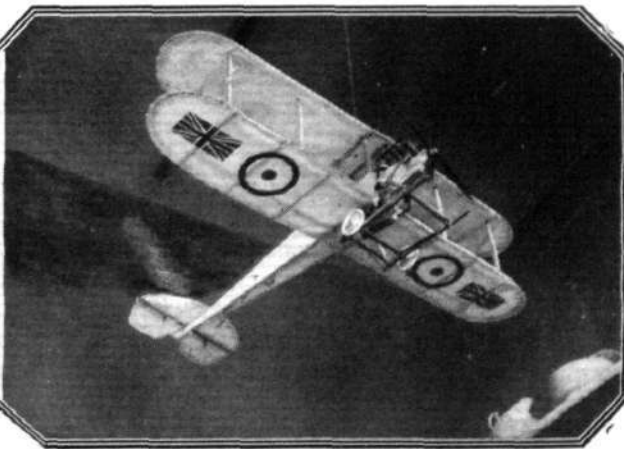
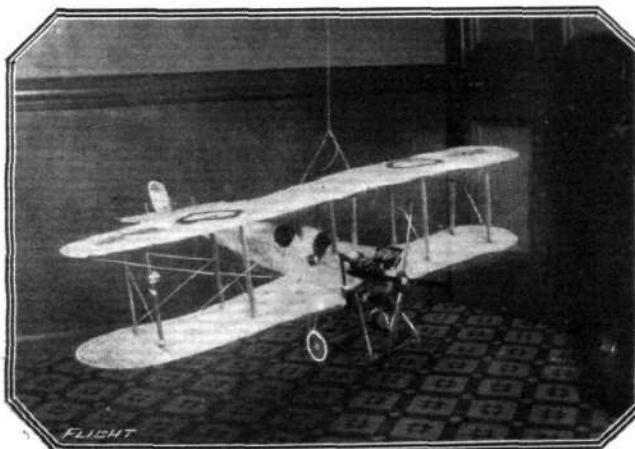
MEETINGS at Brockwell Park every Saturday at 3 o'clock, weather permitting.

Monthly Report.—On July 3rd, Mr. J. W. Reid read a most interesting paper on "Tractors," which was followed by a very lively discussion, in which Messrs. Peel, Clarke, Prodger, and Howse took part. Mr. Reid's tractor, with a flexible rear-edged main plane, has been making some excellent high flights of 40 secs. average duration. Mr. Howse's hydro. has also been out. Towards the end of the month a new 4 ft. span tractor by Mr. Howse made its appearance, and flew well at the first attempt. Flights of over 200 yards r.o.g. have been accomplished, but no durations have yet been taken. Messrs. Prodger and Clarke are busy on new tractors, which should be out very shortly.

UNAFFILIATED CLUBS.

Finsbury Park and District (66, ELFBOT ROAD, HIGHBURY, N.).

Monthly Report.—Flying last month was well up to the average in spite of inclement weather on some occasions, and some new machines have appeared, including biplanes by A. Richards and F. E. Rayner. Mr. Richards' tractor biplane, which flew moderately fast, was very stable laterally, and the wings were of high aspect ratio, while in Mr. Rayner's machine (also a tractor), the a/r being about 5-1, the lateral stability was not so marked, although longitudinally it was more stable than Mr. Richards' and travelled slightly faster. Mr. B. H. Barnard's tractor biplane, to which has been fitted a covered fuselage,



A model of a B.E. made by a Scotch reader, Mr. Jamies Duthie.

now flies somewhat slower, owing, no doubt, to the increased resistance the body; a four-blade propeller is being fitted to replace the 12-inch ordinary, and it is expected to show a better climbing speed on its next appearance. Owing to its size (the main planes being of 500 sq. in. area), the machine seems to dwarf anything else in the air, and presents a most imposing appearance. Monoplanes, of course, have been "doing their bit," and Messrs. Hex, W. Hardinge, A. Richards, and F. Rayner have been flying tractors with excellent results. A speed model by Mr. Hardinge, which appeared on the 24th, developed about 20 m.p.h., as near as could be judged, on quite moderate power. Two or three waterplanes are expected to make their debuts during the coming month, and their appearance will be awaited with interest.

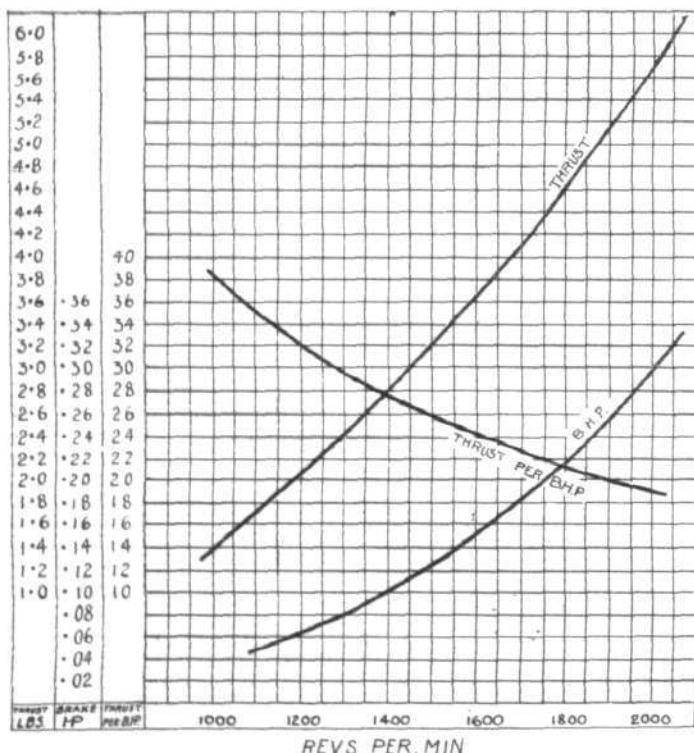
Liverpool Aero Research Club (62, CEDAR GROVE, LIVERPOOL).

Monthly Report.—July 3rd opened the month with an exceedingly wet meeting, only G. H. Kilshaw venturing out, despite adverse weather conditions, one of the good features being the fine stability exhibited by a new upturned-tip biplane, the tips having a greater angle of incidence, the bankings of this machine during small circuits being at times over 60°, no trace of side-slip being noticed. A new negative tip also performing well, both machines showing good climbing capabilities despite heavy atmosphere. No times were taken, however. July 17th, a perfect gale, nevertheless T. W. Bennett putting up some very good flights with his re-covered plane canard. July 24th proved the busiest day of the month, the old arrow plane of T. W. Bennett behaving very well, durations and altitudes being good, this member's r.o.g. biplane canard flying exceedingly stable. The hollow spar 4 ft. span mono. of Tear-Bennett flying in usual good style. The chief feature of this meeting, however, was the fine performances of the B. Tear single r.o.g. tractor monoplane, the altitude and stability being the best in tractor flying up to the present. Taking weather, &c., into consideration a very good month has been the result. July 31st was no exception, and in addition to the appearance of a new back-curved h.l. canard by G. H. Kilshaw, which shaped very well, T. W. Bennett brought out a new streamline hollow spar model, which was doing the $\frac{1}{4}$ min., and shows signs, when properly tuned, of turning out a good duration flier, the stability, despite a very slow speed, being excellent.



SOME TESTS OF A PROMISING NEW PROPELLER.

ALTHOUGH the efficiency attained in modern propeller design is probably as high as that reached in the design of other parts of the aeroplane, there is perhaps no single component regarding which so many and such conflicting theories have been advanced. In this connection it is a point of considerable interest to note how widely designs may differ in form, pitch and area, so long as these are within the range of common practice, without greatly affecting the efficiency. That this is still capable of improvement, however, can hardly be denied, and any new attempt to do so is therefore entitled to consideration. In the accompanying graph are shown the static tests on a new design of propeller carried out at the aeronautical



laboratory of the Northampton Polytechnic Institute. From these it will be seen that some surprisingly good results have been obtained, and although static tests are not necessarily a criterion of the efficiency of a propeller, it is not unreasonable to anticipate that when it is found possible to have the model in question tested at various translational speeds, proportionally good results may be obtained. This may, of course, entail alterations to find the best possible form for different speeds, as it seems probable that, for instance, the pitch that gives best results in a static test will be found too low when the propeller is advancing through the air. But

the preliminary trials would appear to indicate that the principle has something to recommend it, and we hope that Mr. W. H. Nosworthy, who is, we understand, responsible for the design, will find the necessary opening to enable him to continue the experiments which have given such good initial results.



CORRESPONDENCE.

National Service. Appeal by Mr. Robert Yerburgh, M.P.

[1907] The thoughts of the whole British Empire are at this moment turned towards the magnificent struggle which our gallant Russian Ally carries on with such heroic bravery against the Teutonic powers. The time seems to me to be appropriate to make an earnest appeal to the nation and to the Government, should Warsaw fall, that the adoption of National Service be Great Britain's reply. The country is ready for it; let the Government act.

Think of the message of encouragement this would convey to our loyal Allies; to the Russians, who to their unconquerable courage have added such heroic self-sacrifice: to the French, whose brilliant and steadfast valour dominates the German masses.

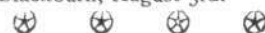
Think how it would give fresh heart to our own splendid men in France, at the Dardanelles, and wherever the Empire is at grips with the German.

Let the people of this country picture to themselves the effect of an immediate declaration of a policy of national service on the Kaiser, his War Staff, and the German people.

The adoption of national service by this country now would convey to friend and foe and balancing neutral alike, in terms which no man could misunderstand, that from now onward every ounce of our national strength would be devoted to the crushing for all time of Prussian militarism, the accursed thing in whose shadow war flourishes and freedom dies.

ROBERT YERBURGH.

Woodford Park, Blackburn, August 3rd.



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Aerial Express, Ltd.—Capital £300, in £1 shares. Formed to assist persons, companies, or corporations to manufacture, buy, let on hire, or deal in aeroplanes, flying machines, balloons (dirigible or otherwise), &c.; to promote companies having the same objects, &c.

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